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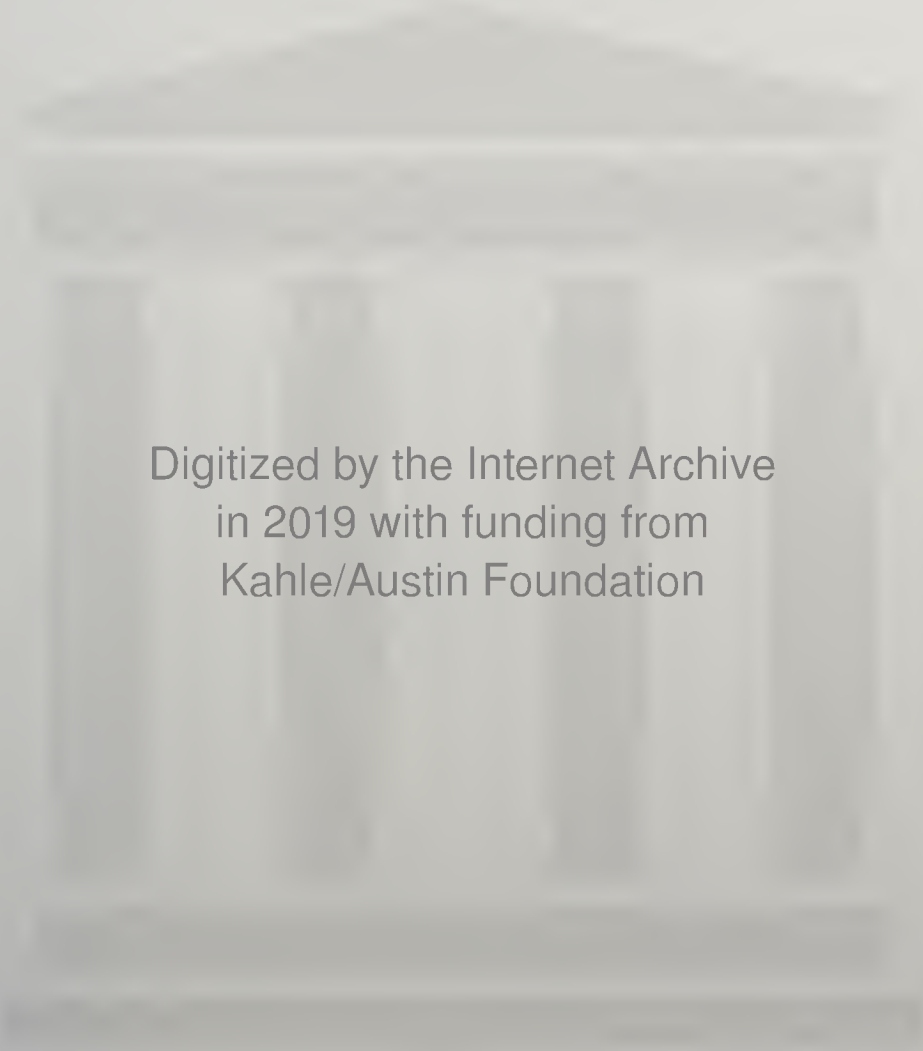
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THE SO-CALLED "ASH CAVES" *In Lee County Kentucky*

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Foreword

This report is the second of a series on Kentucky archaeology issued by the Department of Archaeology and Anthropology of the University of Kentucky.

These reports will be published from time to time as the investigations warrant and will be paged and bound eventually to form regular volumes.

The authors are together responsible for the studies since collaboration is carried out both in the field work and in the preparation of the manuscripts.

THE SO-CALLED "ASH CAVES" IN LEE COUNTY, KENTUCKY

W. D. FUNKHOUSER AND W. S. WEBB
University of Kentucky

INTRODUCTION

In the summer of 1929 the attention of the authors was called to the existence in the eastern mountains of the state and particularly in Lee County of sites which the inhabitants of those regions called "ash eaves." Investigations of these sites during the months of June and July proved that this territory was very rich in archaeological material and was particularly interesting in that it yielded fabrics in unusually fine condition. A number of the sites were therefore rather carefully worked and the results of these investigations furnish the material for this report.

ACKNOWLEDGMENTS

The authors are greatly indebted to Mr. John Gourlay of Lexington, Kentucky, who not only gave permission to excavate on the properties under his control, but allowed us the use of his private camp while we were working in the "Red-Eye Hollow" site.

Acknowledgment is also made of the many courtesies extended to us by Mr. J. C. Elkins of Lee County whose constant assistance was most appreciated.

Our thanks are also due to Mr. W. H. Ross of the Texas Oil Company and to Mr. C. C. Weaver of the same company who were extremely generous in helping us to get established at various sites and without whose influence and assistance the work could not have progressed.

At Fixer, Mr. Russell F. Faulkner and Mr. George W. Booth rendered us many services and were constantly assisting us in many ways.

PHYSIOGRAPHY OF THE REGION

Lee County is situated in the eastern-central portion of Kentucky and its physiography is typical of the foothills of the mountains. It is cut by deep gorges and some of the ridges extend to

an elevation of 1,300 to 1,400 feet. It is a region of magnificent scenery and in prehistoric times when well wooded was undoubtedly a favored territory for the aborigines. (Figure 1).



FIG. 1. A TYPICAL CLIFF IN LEE COUNTY.

It is drained by the North, Middle and South Forks of the Kentucky River and by many local tributaries, including Red-Eye Creek, Big Sinking, Little Sinking, Cave Fork Creek, Little Ash Creek, Bald Rock Creek, Sore-Heel Creek, and others mentioned in this report. The walls of these creeks are often precipitous and show many large overhanging ledges which form the rock shelters in which the ash beds were found.

The hard rocks of the region consist chiefly of Coal Measure sandstones, sandstone conglomerates, with shales and coals of the Pottsville (Pennsylvanian) formation. Below these are the outcrops of the Gasper and St. Louis limestones of the Middle and Upper Mississippian. A few flood plains show Recent or Pleistocene sands, clays and gravels. Structurally the region is a monocline dipping rather gradually to the south-east from the dome of the Cincinnati Arch. This normal structure is considerably broken by sharp anticlines and deep eroded gorges.

Coal is mined in the region to a considerable extent and natural gas is produced in small quantities, but the principal

mineral product is petroleum which is found all over the territory in the Devonian limestone at depths of from 500 to 1,400 feet. The production of oil was formerly much greater than it is now but the country is still thickly dotted with wells which are constantly pumped by central power operated by various companies. Most of the land is now under lease for petroleum production.

It may be noted, as referring to our own camping experiences, that the water wells are equipped with much the same machinery as the oil wells and are pumped from the same "power." Also that the water is in most cases strongly mineral.

This mineral water, usually with a film of oil on the surface and pumped through rusty iron pipes by oil machinery, is at first not particularly attractive to the stranger and makes a coffee which is fearful and wonderful to behold.

The vegetation of the region is typical of that of the eastern mountains of Kentucky. Most of the large timber has been cut off and the mountain sides are now thickly covered with second-growth hickory, chestnut, pine and oak with a dense shrub undergrowth of rhododendron, laurel, sumac, hazel and sassafras and in the valleys a dominance of woodbine, poison-ivy and fern.

SITES

The sites examined are all located in the northwestern corner of Lee County not far from the county lines of the adjoining counties of Estill and Wolfe and are indicated on the accompanying map. (Figure 2.)

This map shows an area of twenty-five square miles embracing the valleys of Big Sinking and Little Sinking creeks. The important rock shelters are indicated on this map by the numbers from 1 to 6 inclusive as follows:

1. Red-Eye Hollow at the head of Big Sinking.
2. Little Ash Cave in Wilson Hollow.
3. Cave Fork Hill Cliff.
4. Big Ash Rock House near Fixer.
5. Rock Shelter in Buckner Hollow on Little Sinking.
6. Great Rock House in Sore-Heel Hollow on Bald Rock Creek.

Sites 1, 2 and 4 were carefully and thoroughly excavated and the results of these excavations form the chief part of this report. Sites 3 and 5 were visited and examined but preliminary investiga-

tions indicated that it would not be wise, due to local conditions caused by certain activities not uncommon in the mountainous

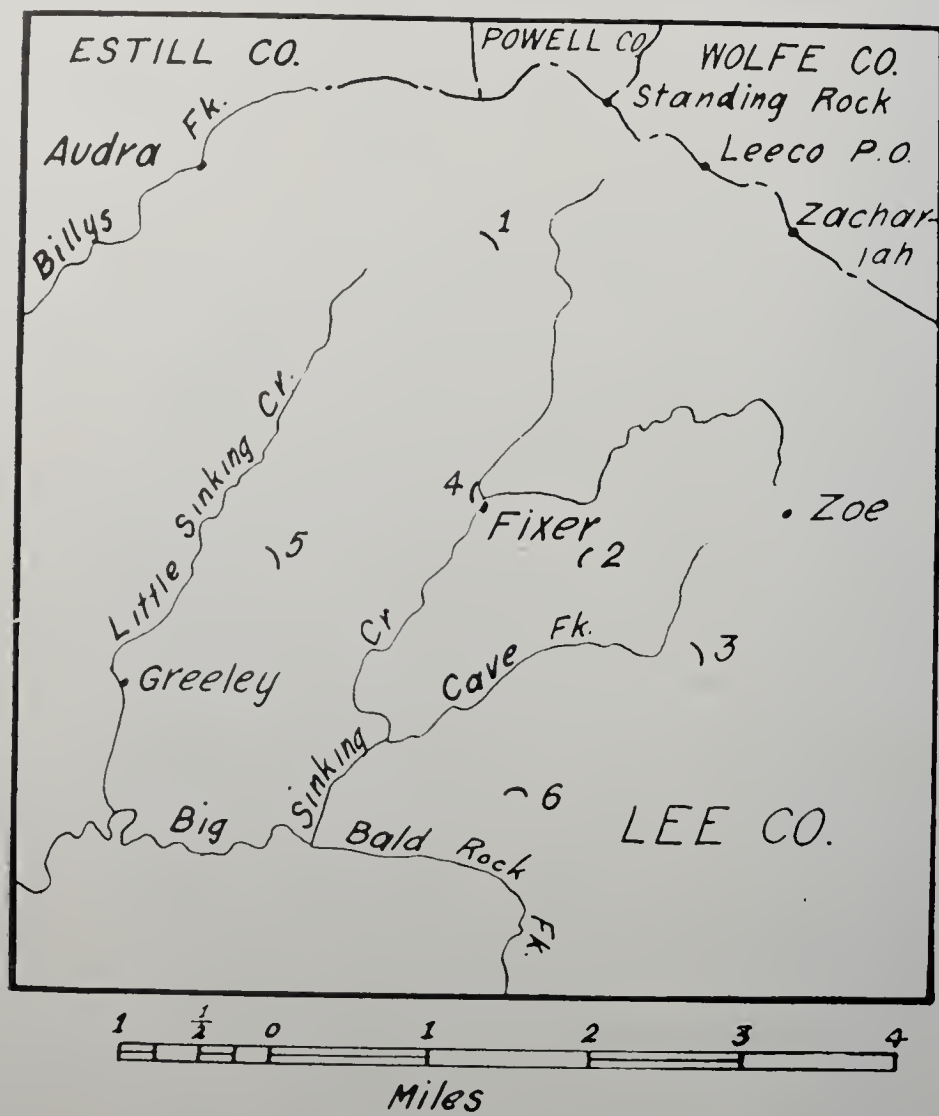


FIG. 2. MAP OF "ASH CAVE" REGION.

regions of Kentucky, to attempt extensive excavations at these sites at that time. Site 6, the largest of all, which consisted of a shelter having an open exposure of some 340 feet in width and about 100 feet in depth with an overhang of about 100 feet, was visited but no excavation was undertaken. In the sandstone floor of this great shelter arose a spring of considerable flow and the

site had been worked for nitrate in the early history of the county. This disturbance of the floor by historic occupation made it unlikely that in this, one of the largest shelters of the region, any material of scientific value would still remain.

The sites are all much alike in general appearance and structure. Although they are called "ash caves" by natives of the region, they are not caves at all but merely huge rock shelters formed by enormous overhangings in the cliff walls. They are all characterized by the large accumulation of wood ashes on the floors of the shelters which must represent fires over a long period or by a large number of inhabitants. These beds of ashes are often twelve to fifteen feet deep and buried in the ashes are to be found skeletons, artifacts and the usual camp debris. The ash beds show rather definite stratification and indicate that the ashes have formed at varying intervals the floors of the shelters. Apparently while the shelters were inhabited, if the ashes became too deep for comfort, a layer of sand, grass and leaves was spread over them, thus forming a new surface and making it unnecessary to clean out the ashes. In many places these definite floor coverings are so perfect and have been so little disturbed that there can be no doubt as to their purpose. Burials were made in these ash beds, particularly around the outside edges and against the back wall of the shelter, and artifacts were hidden or cached in holes dug into the ashes and lined with pine bark.

The most remarkable fact, from an archaeological standpoint, was that the materials so buried or lost were so remarkably preserved. This is especially true of the fabrics which were in excellent condition. It would seem that these beds of wood ashes, strongly alkaline, absolutely dry, never exposed to the elements, and not suitable for burrowing animals, are equally unsuited to the presence of bacteria and that this partial sterilization explains the preservation. Whatever the reason, the sites are in some way very conducive to the fine preservation of materials which ordinarily decay very quickly, such as fabrics, leather, wood and other organic substances.

The more important of the sites excavated may be described as follows:

RED-EYE HOLLOW

Red-Eye Branch is a branch of Big Sinking Creek which emp-

ties into Millers Creek, a tributary of the Kentucky River. The gorge through which Red-Eye Branch runs is about half way between the villages of Standing Rock and Fixer, about one and one-half miles north of the former village. The land is known as the Hall and Burke property and is leased by the Texas Oil Company. The rock shelter is about one hundred yards from the line of the Russell lease, operated by the Superior Oil Company.

The ridge under which the rock shelter is located extends in a semicircle with the face toward the south. The shelter is located about half-way up the cliff and about seventy-five feet above the creek bed. In front of and above the shelter the perpendicular face of the sandstone cliff extends eighty feet to the top of the ridge. The shelter itself is eighty-six feet in width and thirty feet deep under the greatest overhang and faces due south. (Figure 3.)



FIG. 3. ROCK SHELTER IN RED-EYE HOLLOW.

On the floor of the shelter were many large fallen rocks, most of which had been entirely covered with the ashes so that they were not discovered until excavation revealed their presence. (Figure 4.)



FIG. 4. "ASH CAVE" IN RED-EYE HOLLOW.

Moreover in these rocks were found hominy holes, the first which the authors have discovered in this part of the state. Three were found in the shelter—two in one rock and one in another—

and a fourth just outside the shelter. These hominy holes were in comparatively small rocks. In one rock which was exposed above the present surface of the ashes were two holes about a foot apart. One of these holes was fifteen inches deep and six inches in diameter; the other was two feet deep and six inches in diameter.

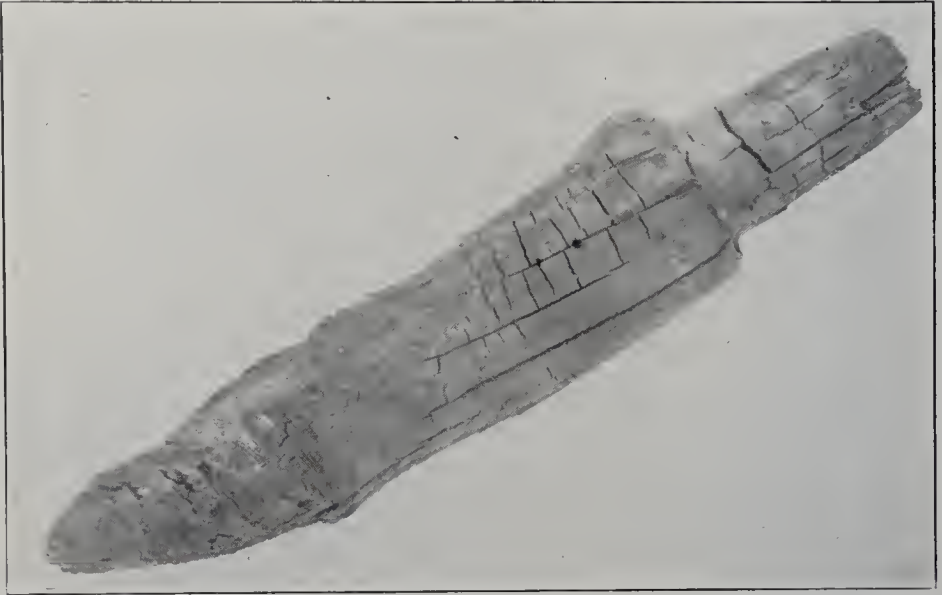


FIG. 5. WOODEN PESTLE MADE FROM PINE KNOT.

In a neighboring rock was a hole nine inches deep and five inches in diameter. All of the holes were almost perfectly cylindrical from top to bottom and in this respect differed from other hominy holes reported from Kentucky* since they were apparently intended for a cylindrical rather than a cone shaped pestle. This conjecture was strengthened by the finding later of three wooden pestles made from pine knots, which were practically cylindrical in cross-section, (Figure 5) and which may have a significance which will be discussed in a later section of this report. Fifteen feet around the cliff wall on the east side and under a fifteen foot overhang in a fallen rock was another hominy hole with the same cylindrical shape but smaller, being only six inches deep and five inches in diameter. All of these holes had been mutilated by vandals so that the lips were not perfect. (Figure 6.)

*Webb and Funkhouser, *American Anthropologist*, pp. 701-709, 1929.



FIG. 6. HOMINY HOLES IN RED-EYE HOLLOW SHELTER.

In excavating the shelter a trench was started thirty feet in front of the back wall of the cliff and parallel to it. This trench was outside of the real ash bed and cut through black humus to



FIG. 7. TRENCHING THE RED-EYE HOLLOW SHELTER.

a depth of two and one-half feet, below which was yellow sand and rubble to an indefinite depth. (Figure 7.) This excavation was carried back through the shelter, the ashes being carefully examined and all stratification noted. The ashes being very light, dry and fluffy were extremely difficult to handle especially when the air was stirring to any considerable extent. The depth of the ashes varied from four feet at the west end of the shelter to over six feet at the east end, and mixed with the ashes were occasional areas of charcoal, burned and unburned wood, mussel shells, animal bones, artifacts, and human burials with here and there large masses of grass, bark and leaves, the latter being in an excellent state of preservation. (Figure 8.)



FIG. 8. ASH BEDS IN RED-EYE HOLLOW SHELTER.

Two important and interesting conditions developed in the course of the excavation. One was the presence of large matted areas of sand, grass and leaves which had apparently been spread upon the ashes to form bedding or floor covering; the other was the intrusion into the ashes of definite pockets of matted leaves and bark in which were to be found nuts, shells, fragments of fabric and occasionally artifacts. (Figure 9.) When first discovered, these pockets were believed to be the nests of burrowing animals but they eventually proved to be definite pits



FIG. 9. CACHE MADE OF LEAVES AND GRASS

or caches, many of which were well made, carefully lined with bark and filled with undoubted cache material such as moccasins, bags, thongs, flints and other artifacts. The position and arrangement of these floors and beds and of the caches showed a distinct stratification representing at least four different periods of occupancy or of levels used by a continued occupancy of the shelter.

Because of the different nature of the contents of the shelter, they may be discussed under the following heads:

1. *Caches.*

The first cache found consisted merely of a mass of leaves, bark and grass which contained hickory nuts and nut shells and fragments of fabric and string, and as has been stated was believed to be simply the accumulation of materials brought into the shelter by cave-rats or other animals.

The second was very similar but seemed to be more definite in shape and contained several flint arrows, a piece of leather and a large piece of fabric.

The third was distinctly a cache, well made and lined with leaves and grass and contained in the center three well made moccasins. This was near the center of the shelter, about ten feet from the back wall and one foot below the surface.

The fourth was close to the third and contained another moccasin and several pieces of wood.

The fifth was about fifteen feet from the back wall and forty feet from the east wall. It was well formed, neatly lined with pine bark and contained a well made fabric bag packed in leaves and grass. This bag was beautifully fashioned, with a tie-string at the top and was completely filled with shelled chinquapins. Both



FIG. 10. WOVEN FABRIC BAGS.

the fabric and the nuts were in excellent condition, the latter being firm, hard, dried and so well preserved that one of the authors ate one of them to determine whether or not they were still edible. The results of this experiment were not particularly pleasant but there were no serious results. The bag was six inches long and about three inches in diameter and contained 350 cc. of the dried, shelled nuts. (Figure 10.)

Cache number six was a very definite pit three feet from the back wall in the center of the shelter and six inches below the surface. It was two and one-half feet deep and was walled with large pieces of pine bark set on edge with concave sides inward and neatly set together. The bottom consisted of two slabs of bark. The pit was lined with oak, chesnut and sassafras leaves, all in excellent condition. This pit was empty save for ashes and two small pieces of flint which might have worked in from above.

The seventh pit was a large one, about two feet in diameter and two feet deep and like the preceding was neatly lined with large pieces of pine bark. It contained a pair of moccasins, one of them in excellent condition. (Figure 11.) This cache was about eight feet from the back wall and twenty feet from the east wall of the shelter and one foot below the surface of the ashes.

2. *Artifacts.*

By far the most interesting and important of the artifacts were the fabric materials which will be discussed in a separate section of this report.

In addition to the seven moccasins which have been mentioned and the very interesting pouch or bag which contained the chinquapins, a large number of smaller pieces of fabric were discovered. Most of these were of coarse weave resembling burlap or matting. Also a considerable number of pieces of string were found, apparently twisted from the same material, and several fragments of leather.

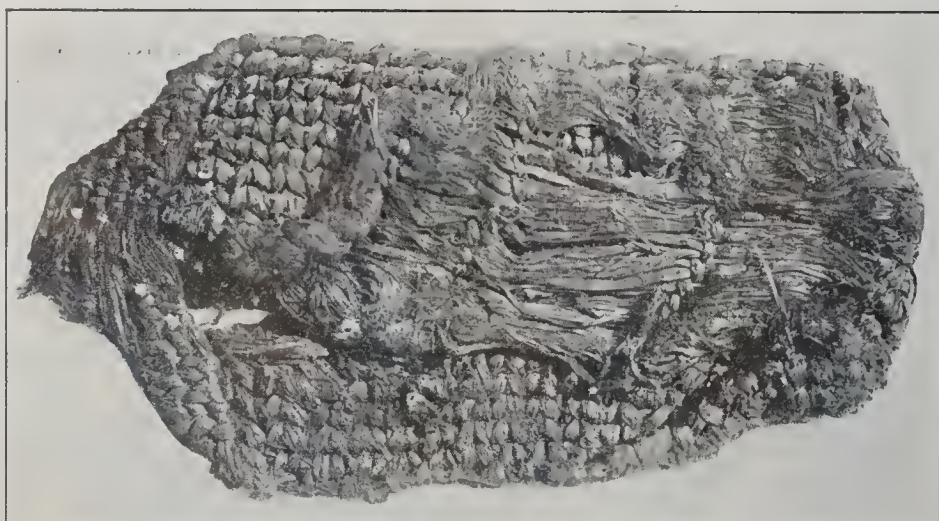


FIG. 11. MOCCASINS FROM RED-EYE HOLLOW.

Aside from fabrics, the shelter yielded few artifacts, the total list, including those found in the caches, those found with skeletons and those found in the general digging being as follows:

- 7 moccasins
- 1 fabric pouch or bag
- Many fragments of fabric
- Many pieces of string
- Several pieces of leather
- Many pieces of shredded and worked bark
- 1 hammer-stone
- 3 wooden pestles
- 1 stone pestle
- 14 bone-awls
- 1 grooved ax
- 12 flint arrow-heads
- 1 bone handle
- 1 drilled mussel-shell
- 1 grooved stone
- 1 whetstone
- 3 pieces worked deer horn
- Fragment of banner stone
- 2 limestone hoes
- 1 net sinker
- 4 pieces of worked shell.

The ax was of the "three-quarter-grooved" variety but was damaged. The stone pestle was of the usual type in which the small end was the percussion surface. The net sinker was a very fine specimen of heavy spar (barium sulphate) and beautifully worked. Perhaps the most significant stone artifact was the quarter of the banner stone. This stone is of similar material and form of those found by Professor C. B. Moore in his excavation at Indian Knoll in Ohio County and considered by him as net spacers.* It will be remembered that Professor Moore found many of these beautiful specimens in separate quadrants, presumptively the result of ceremonial breaking at the time of interment of the dead. Not only is the Lee County specimen, which is shown in the lower left-hand corner of Figure 12, of similar nature and like size and form, but it has been broken (quartered) in the same way. Broken and complete arrow points were found scattered through-

*Moore, C. B., *Journal of the Philadelphia Academy of Natural Sciences* XVI: 431-437.

out the ash bed. There appears to be no predominant type of these arrows which differ not only in form but in variety of material. Altogether the stone artifacts from Red-Eye Hollow were not plentiful nor particularly interesting. (Figure 12.)



FIG. 12. STONE ARTIFACTS FROM RED-EYE HOLLOW.

Bone artifacts were fairly plentiful if we include awls, many of which were merely split fragments of bone worked to a point. The bone most commonly used for awl manufacture on this site was the cannon bone of the deer. Besides the numerous awls, a cylindrical bone handle about five inches long was discovered. This had been made by cutting out a central section of a large bone, grinding the ends square, and reaming out the marrow cavity to receive the blade. The worked tips of deer horn had probably been intended for arrow points. (Figure 13.) One of the horns, however, had been cut off square on the ends and the ends showed evidence of having been hammered, which suggests that the artifact may have been used as a modern mechanic uses a copper drift.

A few pieces of worked shell were found which may represent scrapers or spoons. One piece was drilled.

Pottery fragments were not plentiful and the few shards

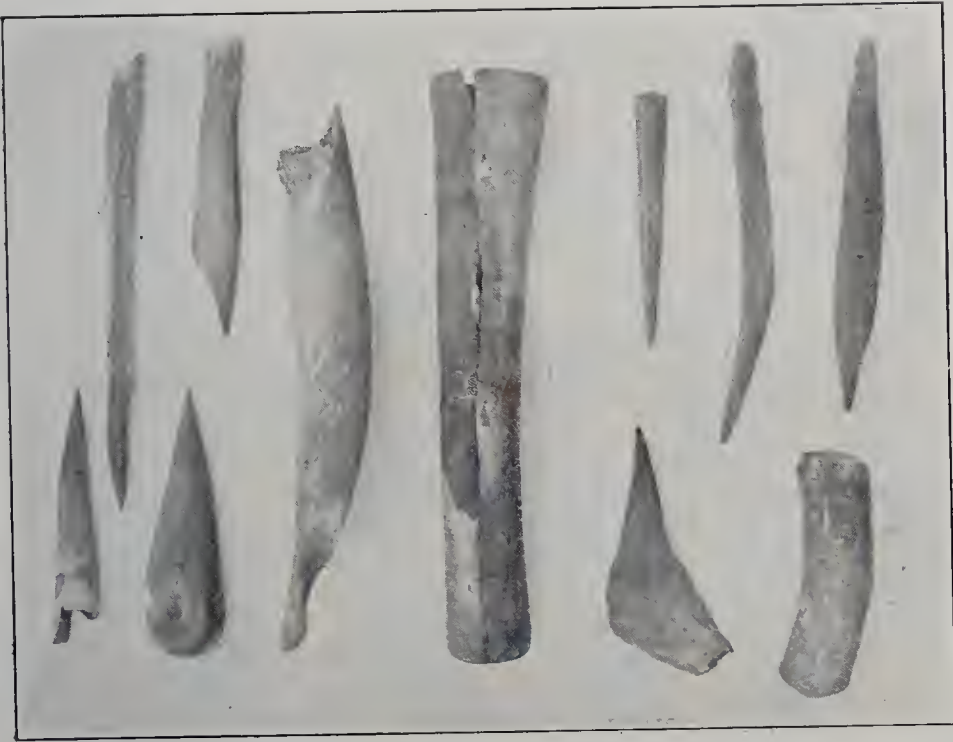


FIG. 13. BONE AND HORN ARTIFACTS FROM RED-EYE HOLLOW.

which were found were all very near the surface or against the north wall where the ashes had settled. Since pottery was not found throughout the ash bed we conclude that the small amount taken from the surface indicates that the pottery is not associated with the original inhabitants of the shelter but was left there by later and perhaps transient visitors to the site. (Figure 14.)

3. *Burials.*

The human remains found in the ash bed were in a very poor state of preservation. This is rather surprising considering the excellent condition of the fabrics, wood, bark, leaves, grass and worked bone but it may be that the body acids, released by the decaying flesh in the strongly alkaline wood ashes produced chemical reactions which were conducive to rapid disintegration. Whatever the explanation may be, the fact remains that the human bones were in most cases so badly decomposed as to render identification and preservation very difficult. All fragments of bones were of

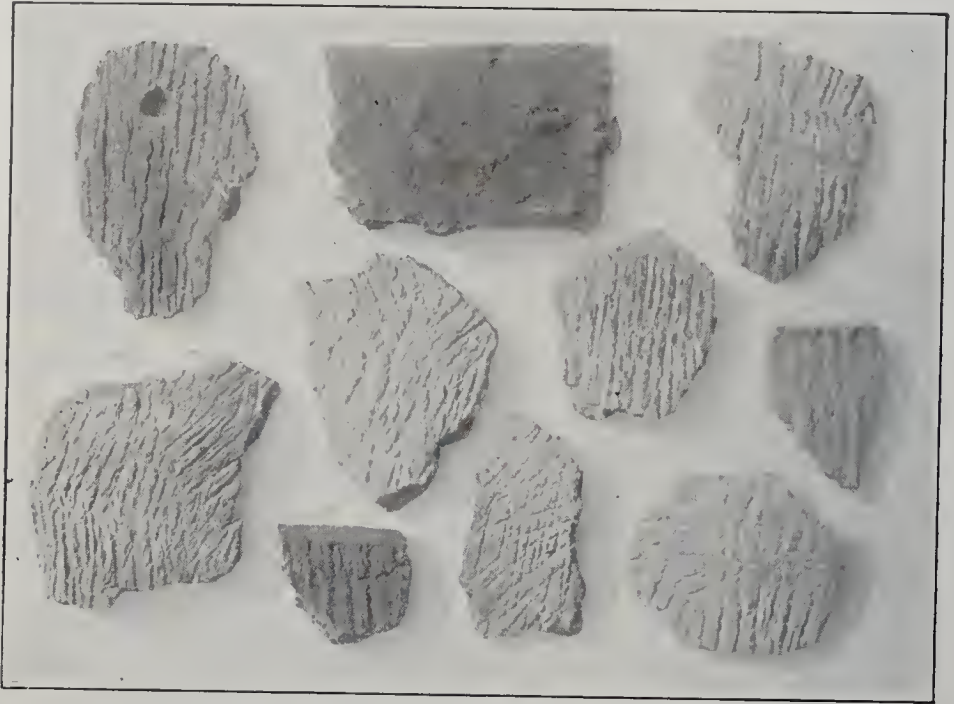


FIG. 14. POT SHARDS FROM RED-EYE HOLLOW.

course carefully saved but they had not been suitable to any satisfactory study.

In no case was there any indication of a well made grave. The ashes, of course, would not show intrusive digging and there were no stones to mark the outlines of the grave. In many cases the bodies seemed to have been forced down between the large fallen rocks on the floor of the shelter and covered with ashes.

Fourteen burials were found in the shelter and are listed as follows:

Skeleton Number 1

On yellow sand at outside edge of shelter. 2½ feet below surface, 27 feet from back wall of cliff and 20 feet from west corner. Adolescent. Bones forced down between two large rocks. Body fully flexed. Head toward east. Bones in bad condition. No artifacts.

Skeleton Number 2

Infant. 1.2 feet below surface, 26 feet from back wall, 12 feet from west corner. Bones badly decayed, few entire. Skull bones, ribs, a few vertabrae and the long bones of

the arms and legs indicate small child. Body apparently flexed. No artifacts.

Skeleton Number 3

Child. 27 feet from back wall, 12 feet from large fallen rock near east end, 1 foot below surface. Skeleton tightly wedged between two rocks. Bones badly decayed. Body flexed. No artifacts.

Skeleton Number 4

Adult female. 6 feet deep in ashes at northwest corner of shelter, 4 feet from west wall and 5 feet from back wall. Bones in bad condition. Had been a completely flexed burial with head toward the south but bones had been disturbed by some burrowing animal or by digging. One quarter of a banner stone, a grooved ax and a wooden pestle found with skeleton. This skeleton was covered with nine large rocks.

Skeleton Number 5

Fragments of bones of an infant. 1 foot from back wall, 6 feet from west wall and 4 feet deep. Bones fragmentary and badly decayed. With skeleton was found a well worked bone which had apparently been a handle for some artifact. Position of body could not be determined.

Skeleton Number 6

Adult. Sex undeterminable. Bones touching back wall and 12 feet from west wall. 6 feet below surface. Bones so badly decayed that they were not saved. Position of body could not be determined. No artifacts.

Skeleton Number 7

Infant. 4 feet from back wall, 13 feet from west wall, 4 feet deep. Bones in excellent condition and practically every bone in skeleton found and preserved. The body had been buried between two large fallen rocks and covered with two small flat rocks. Body flexed. Head toward east. No artifacts.

Skeleton Number 8

Adult. Sex not determined. Bones in very bad condition. Against back wall, 20 feet from west wall. 6 feet below surface. Body flexed with head toward west. The penis bone of a raccoon, the worked prong of a deer horn and a bone awl were found with the skeleton.

Skeleton Number 9

Infant. About 1 foot south of Number 8. Bones in fair condition but in much disarray. 6 feet below surface and

about 6 inches above floor of shelter. 3 feet from back wall and 21 feet from west wall. The bones had apparently been disturbed and it was impossible to determine the original position of the body. No artifacts.

Skeleton Number 10

Child. 3 feet from back wall and about center of shelter east and west. 3 feet below surface. The body had been flexed and the head toward the east. The bones were in fair condition and most of them were distinguishable. The skeleton represented a child about seven years of age. No artifacts.

Skeleton Number 11

Infant. About 2 feet east of Number 10. 8 inches above the rock floor of the shelter. Only a few badly decayed bones found. No artifacts.

Skeleton Number 12

Adult. Old woman. On the floor of the shelter, 1 foot from the back wall of the cliff and 2 feet east of Number 11. Most of the bones were badly decomposed but the skull, teeth and pelvis were in fair condition. Body flexed with head toward the east. No artifacts.

Skeleton Number 13

Adult. Sex not certainly determined but seemed to be female. Skullbones and teeth in fair condition but other bones badly decayed and had been disturbed. Original position of body not apparent. Skeleton was 1 foot from back wall and 12 feet west of north end of large fallen rock. 5 feet below surface. No artifacts.

Skeleton Number 14

Adult. Sex not determined. 5 feet below surface, against back wall and 4 feet east of Number 14. Bones badly disintegrated and original position of body not evident. No artifacts.

It is interesting to note that so far as could be determined all the skeletons represented women and children. Also that practically all of the artifacts found in the shelter were of the type associated with the life of women. It may be that this shelter represents one of the "women's caves" which are known to have been set apart in certain instances by primitive peoples.

4. Animal Bones

A considerable number of animal bones were found in this

shelter but all were fragmentary and most of them were burned or charred. They apparently represent the usual camp fire debris. Among those most easily recognizable were the bones of the bear, deer, raccoon, ground-hog, and wild turkey. In addition to the bones, the kitchen midden material contained mussel-shells and snail-shells and an abundance of terrapin shells, but whether these shells were used primarily for food, for ornament, for tempering pottery or for some other purpose is conjectural.

5. *Pottery.*

Only a few fragments of pottery were found on this site and these shards did not extend down through the ashes but were all on or very near the surface.

It is interesting to note that deeper in the ash beds were found many fragments of gourds and the suggestion is presented that the pottery marks a later culture while for the earlier culture the gourds took the place of pottery. This suggestion is further supported by the fact, which will be brought out later, that the flints and other artifacts found in the deeper deposits of the shelters do not agree with materials found on the surface or superficially intruded.

NO MAN'S LAND

A tongue of land extending into Red-Eye Hollow at the edge of the Burke-Hall lease and very close to the line of the Petroleum Exploration Company lease is known locally as "No Man's Land." On the north side of this ridge and about 400 yards from the rock-shelter just described, is another excellent shelter, much smaller than the first but even better suited for habitation since it is well roofed and takes on the aspect of a cave.

This shelter is about fifty feet from the floor of the valley and twenty feet from the top of the ridge, which is not as high as the Red-Eye Hollow cliff. The shelter is nearly rectangular, thirty feet deep, fifteen feet wide and fifteen feet high. The floor is entirely of sand with no signs of ashes except those from fires of modern hunters who occasionally use the place as a temporary shelter.

The floor of this shelter was examined to the depth of three or four inches over the entire area and two trenches three feet deep were dug, one across the cave near the mouth and one down the

center from front to back. There was no evidence of ancient occupation except one small piece of worked flint, found close to the surface.

“LITTLE ASH CAVE”

Wilson Hollow is a deep ravine about a mile and a half long and about 800 feet wide extending in a direction almost due north from Cave Fork Creek on the Eureka lease of the Texas Oil Company, the mouth of this ravine being just opposite Tool House Number 2 of this company. This ravine is enclosed by the usual sandstone cliffs which are almost vertical and from 150 to 200 feet high. The enclosed area is drained by Ash Cave Creek, which flows into Cave Fork at the extreme southern end of the valley. Our attention was called to a rock shelter under the cliff on the western side of this ravine by Mr. C. C. Weaver, Assistant Superintendent of the Texas Oil Company, who extended to us many courtesies and gave valuable information and assistance in this investigation.

This rock shelter was found to be made by the usual overhanging cliff, having a frontage of 102 feet and a depth of fifty feet. In the rear of this true shelter, a shallow cavern having an entrance forty-one feet wide and a overhead clearance of four feet extended back into the cliff to a depth of thirty-eight feet. The floor level of this shelter was some eighty feet above the level of the stream in Wilson Hollow. The floor plan of this shelter showed the usual evidence of the action of the weather, large pockets of sandstone having fallen from time to time to the shelter floor below. Such of these large blocks of stone as could be moved by primitive man, seemingly had been rolled in considerable number to the edge of the overhang, and these formed an irregular, rough, rubble wall. Many, too large to be moved by any means at the command of prehistoric man, remained on the original sandstone floor of the shelter. Behind this rubble wall, extending over the whole floor of this shelter and back into the cavern in the rear, ashes had accumulated to a depth varying from 1.5 to 4.5 feet. This accumulation of ash had long been observed by the local residents and since another such deposit of ash existed some two miles distant in a shelter near Fixer, Kentucky, which has been locally designated as “Big Ash Cave,” this site in Wilson Hollow

became known as "Little Ash Cave," or simply "Little Ash," and the stream flowing in the valley, as Ash Creek. Figure 15 is a longitudinal section to scale of this shelter, showing the ash layer resting on undisturbed yellow sand and the stone fallen from the cliff roof, forming a rubble wall at the entrance.

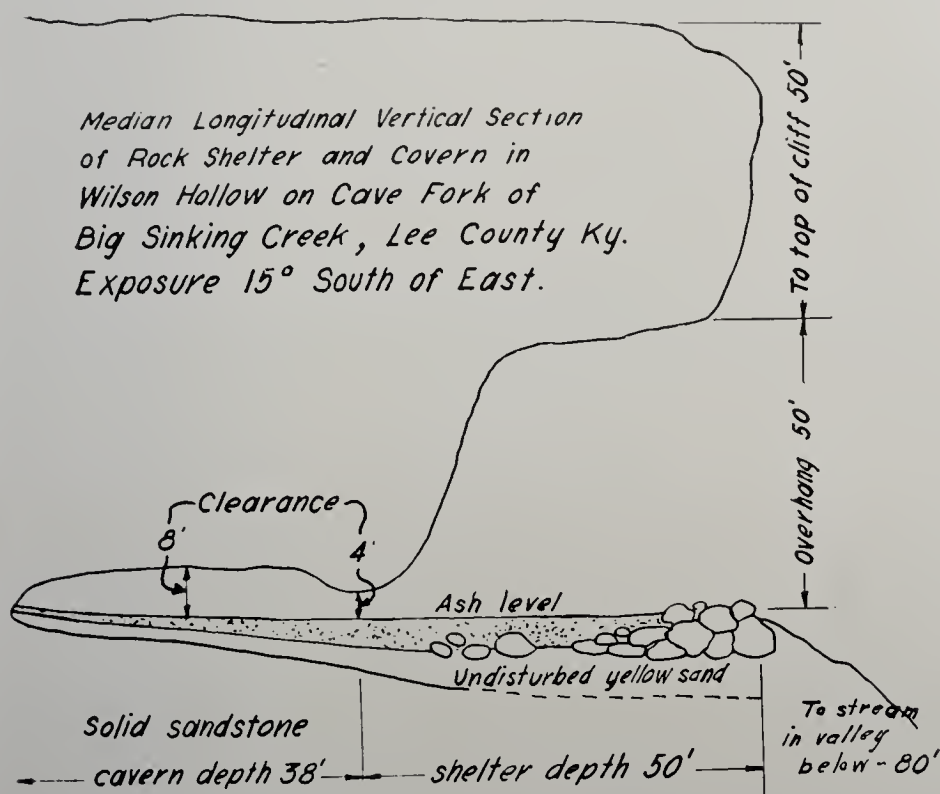


FIG. 15. DIAGRAM OF VERTICAL SECTION OF "LITTLE ASH" CAVE.

Not only had this shelter served the purposes of prehistoric man, but in recent years it served as a storehouse and dwelling and as a stable for lumber men with their teams, who occupied this shelter for a season while the Hollow was being cut for timber. During this occupation, a board wall was erected under the low overhang which separated the cavern from the shelter in front, the cavern being used as a store-house for supplies. The outside shelter was used to stable the teams. Doubtless, because of this occupation all surface indications of prehistoric occupation, such as were found in Red-Eye Hollow, previously described, and in Buckner Hollow on Little Sinking, had been destroyed. In fact, even



FIG. 16. ROCK SHELTER IN WILSON HOLLOW.

the heavy ash layer had been so covered over by recently introduced material that it appeared at first doubtful if any investigation was worth while. However, after the recent filling of some five inches was removed, the ash layer was found to extend over



FIG. 17. HOMINY HOLES IN "LITTLE ASH" CAVE.

Floor Plan of Rock Shelter
in Wilson Hollow on Cave Fork
of Big Sinking Creek —
Lee County, Ky.

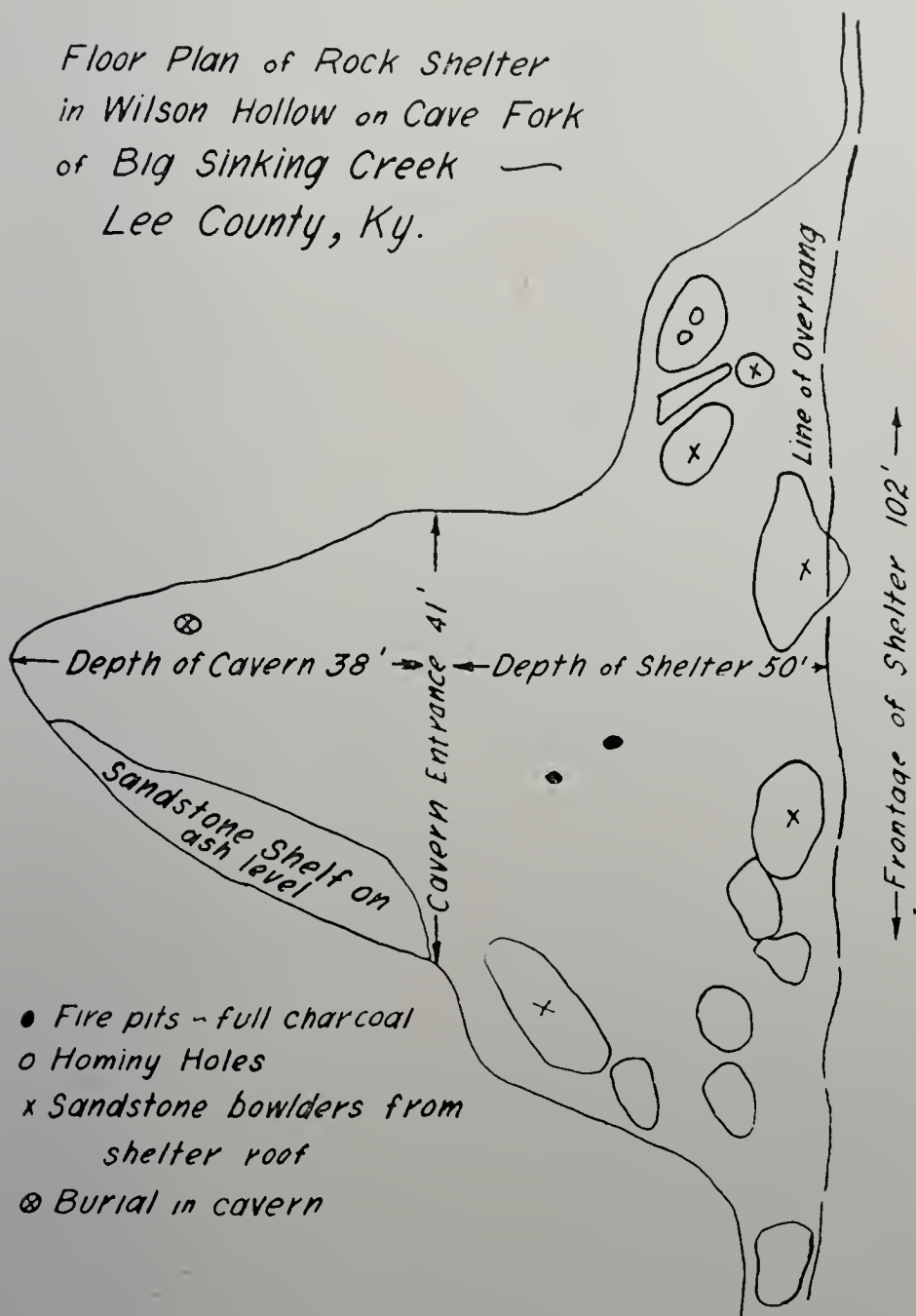


FIG. 18. GROUND PLAN OF "LITTLE ASH" CAVE.

the entire cave floor. Before beginning excavation of this site it was necessary to remove the wall built across the cavern entrance, and to cut down some second growth white walnut and chestnut oak, which had grown so close to the cliff, and so high as to practically close the entrance of this shelter. After these obstructions were removed, the shelter in the cliff appeared as in Figure 16. The cliff wall here is typical of Big Sinking Valley, where the vertical, unbroken walls extend for miles upon mile surrounding the valley, the top being inaccessible from the valley, even to experienced mountain climbers.

In the front of this shelter, near the northern end, two hominy holes were found in a large boulder. The larger hole was twenty inches deep by five inches in diameter at the top, and the other hole had just been started. It was only five inches deep. These are shown in Figure 17. Their location is shown in the ground plan of this shelter, which is represented by Figure 18.



FIG. 19. EXPLORING ASH BED IN "LITTLE ASH" CAVE.

The party excavating the site consisted of one of the authors; his son, William L. Webb; Lee Miles, a student; and three laborers. The excavation was begun at the edge of the overhang, the ashes



FIG. 20. TRENCHING AN ASH BED.

Looking outward from the cavern.

being shoveled outward and down the hill, being thrown outside the rubble wall until a trench was advanced entirely across the frontage, as shown in Figures 19 and 20. This permitted the entire ash bed to be removed and examined down to the original sand floor, which was carefully observed for disturbances in the yellow sand. This removal of ash required the entire party working four and one-half days to make a thorough examination. Close attention was paid to any indications of stratification of artifacts in this ash layer, but no such stratification of artifacts was observed. However, the ashes themselves were easily seen to be in layers two to four inches thick. These layers were not continuous over the whole floor, but were large patches ten to fifteen feet in width. Interspaced between these ash layers were layers of clay and sand from one-half inch to two inches in thickness. Many of these clay layers showed clearly the action of fire, the iron content having been burned a deep red. A vertical wall cut down in this ash bank would therefore present various strata very marked in color difference and in hardness. Thus layers of gray ash, yellow sand, white ashes, yellow clay, charcoal filled ashes, red clay, etc., would follow each other, from bottom to top without any regularity of sequence. As the trench was advanced, these individual layers would either fade out or grow thicker, or divide into two, every five or ten feet. Such conditions seemed to suggest that the occupants of this shelter would burn fires on the site till the ash layer became troublesome from dust, or for other reasons

objectionable. Instead of cleaning the site by the removal of ashes, some material, usually clay but often sand, was carried in and spread over the ashes. New fires were then started, and later, when the ash layer grew to be three to five inches thick the process would be repeated. Thus ash actually represented little if any more than two-thirds of the total bulk of the fill of this site. That these ash layers were covered at intervals by clay, or sand, seems supported by the fact that certain ash layers contained on the upper side a large per cent of charcoal, probably the result of being covered over while the fire was still burning.

Throughout the entire ash bed, kitchen midden material was plentiful, broken animal bones, mussel shells, awls and other artifacts were found at all levels, seemingly without variation in different levels. All bone material was placed in a single pile as found, for more careful inspection later. A single pile of bones at the end of the third day's digging, revealed, by actual count of the easily recognized bones, the following numbers:

Bear Jaws	8
Scapula of Deer	62
Vertebrae (perfect)	11
Cannon Bone Ends	63
Mussel Shells	106
Deer and Elk Jaws	111
Femur of Deer	34
Skulls and Antlers	34
Carapace of Box Tortoise	16

This by no means represents the total number of bones in this pile nor is it the total of these particular bones found on the site. It does show that bear, elk, deer, tortoise and mussels were extensively used as food. The absence of wild turkey is to be noted, none being found at this site, although a few small bird bones and those of water fowl were found well preserved in the ashes, as well as fish bones. It may be that the presence of ashes about the bones kept them dry. This dry condition might have so limited the action of bacteria that deterioration was practically impossible.

Near the center of the shelter and at a depth of two feet, were found two charcoal pits. These had been made after the ash level had attained a considerable depth. They were probably receptacles for keeping fires. The hole was dug in the ash floor of the shelter, and a pine log set on end, or pine knots piled into the hole.

When set on fire, since oxygen was largely excluded, the burning was so slow that fire could be kept a long time. Figure 21 shows one of the two such pits in "Little Ash" which were quite similar to those found in Red-Eye Hollow. A covering of a few inches of



FIG. 21. A FIRE PIT IN "LITTLE ASH" CAVE.

ash would serve to retain fire a long time. The top of these pits were, when first made, near the floor level.

Prior to this investigation, transient visitors to this site had dug holes into this ash bed, and had started small trenches under the edge of large rocks on the cavern floor. These had resulted in disturbing at least one burial, as fragments of a human skeleton had been dug up and left lying on the rock shelf of the cavern. No other human remains were encountered in the floor of the shelter, and not until the rear of the cavern was reached, was any burial found. In the position shown on the floor plan (Figure 18), a flexed burial shown in Figure 22 was discovered. It was first located when the skull was struck by the shovel of one of the workmen. This damage caused a portion of the skull to fall into the skull cavity. This burial was a good example of the completely flexed type. Three large rocks lying on top of this skeleton seemed to have been placed on top of the body at the time of burial, but no attempt had been made to construct a stone grave. A hole, some



FIG. 22. A FLEXED BURIAL IN AN ASH BED.

six inches deep, appeared to have been dug into the sand under the ashes, and the body placed therein and covered with ashes. The bones of the skeleton were in a very good state of preservation, even the smaller and less compact bones being complete. No artifacts were found with this burial, but six mussel shells and a river pebble were found near the pelvic cavity, and were thought to have been mortuary offerings. When this skeleton was lifted, a second burial was revealed immediately below. Figure 23 shows this burial and the very apparent circular hole which had been cut down into the yellow sand under the ash layer. The skeleton in this burial was not complete, the skull being absent, as was also one entire leg. From the disposition of the parts of this skeleton,



FIG. 23. A BUNDLE BURIAL IN A ROUND GRAVE.

it would appear the body had been dismembered before burial, and the parts of the skeleton arranged in this circular grave. The absence of a portion of the lower skeleton may be explained on the assumption that the upper skeleton was buried much later and when this grave was made some of the bones of the lower skeleton may have been removed. In the earth, at least a foot above the first skeleton, a lower jaw, an axis and an atlas were found. These may have been parts of this lower skeleton which may have been disturbed by the later burial.

Some five feet distant, and at the bottom of the ash layer was found a burial of bones of a dog, very definitely placed in a grave.

On the bottom of the cave floor near the south wall was found a very fine specimen of stone hoe. (Figure 24.) This hoe is nearly rectangular, 11.5 inches by 6.25 inches, and .7 inches thick, and is

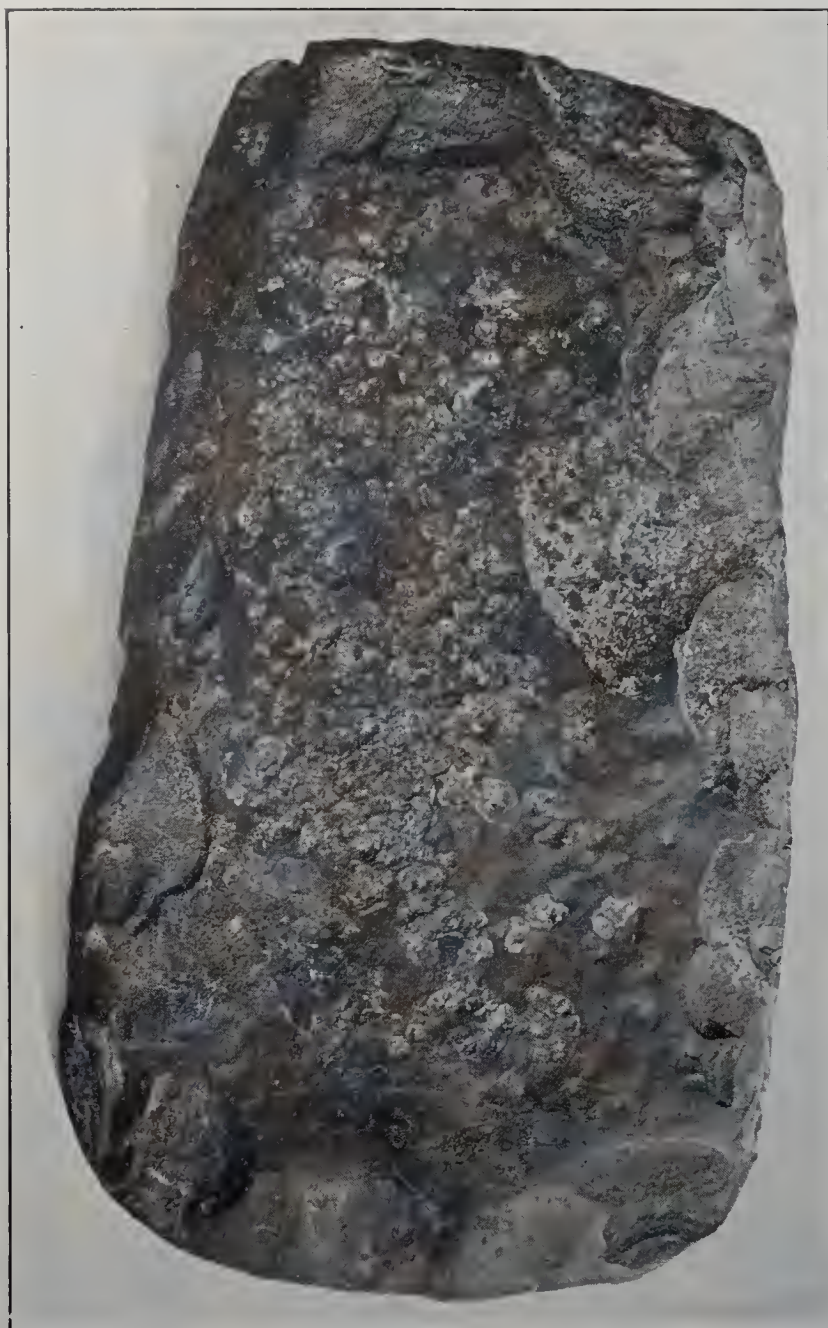


FIG. 24. A REMARKABLE ANCIENT HOE.

of very primitive type, being a two handed hoe and shows no evidence of having had a handle attached. The blade is beveled on one side and shows much use. Since it was on the floor of the

shelter under some four feet of ash, it would appear that its position as well as its form, would argue its association with the earliest occupation of this shelter. The material composing this hoe is thought to be oil shale, common to that locality.

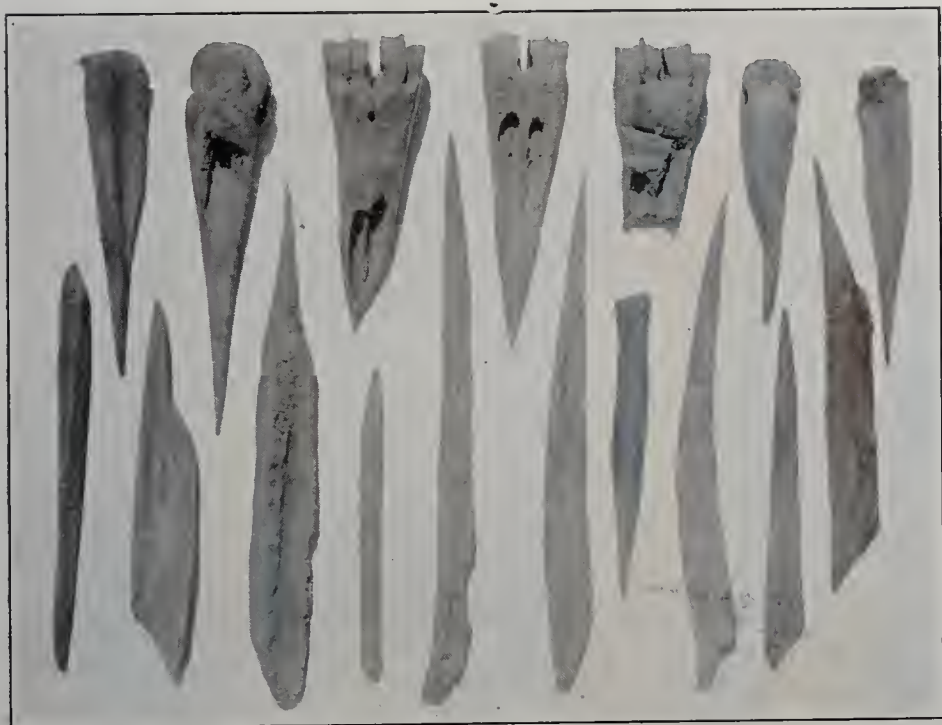


FIG. 25. BONE AWLS FROM "LITTLE ASH" CAVE.

Throughout the working of this site at all levels in the ash pit, bone awls were found. Many were made from bone splinters which had been worked to a point. The large number of these points suggests that they may not be true awls, but may have served to fasten clothing or as other household implements rather than as perforators. Since they were found in the ash area about fires, it may be that they were used in cooking, possibly to lift food from the boiling pot, or perhaps in eating as we use individual forks. In this site, forty-seven pointed bone splinters were recovered. The true awls found at this site seem to be characteristic of this location, all being made from the distal end of the cannon bone of the deer. In some cases the whole end was used, but quite often the bone was split longitudinally and a half end worked into an awl. (Figure 25.) No awls were found made from any other

bone at this site. Unworked ulnae of deer and elk were particularly plentiful on this site but none showed any indication of having been worked.

One very unusual bone artifact found was evidently a handle, made by cutting off the lower end of the deer humerus some seven and one-half inches from the joint and reaming out the squarely cut end. (Figure 26.) No shell artifacts were found except a



FIG. 26. SHELL AND BONE ARTIFACTS FROM "LITTLE ASH" CAVE.

single river mussel shell which was worked smooth over the whole outside surface and edge, probably being used as a spoon or scraper and one other shell which had a circular hole cut in it. (Figure 26.) River mussel shells were plentiful in the ashes and composed a considerable portion of the kitchen midden material. From the very lowest portion of the ash layer, three fragmentary artifacts were taken, a broken hematite gorget, a broken black slate gorget, and one-quarter of a banner stone, made of gray granite. (Figure 27.) This banner stone is broken longi-



FIG. 27. FLINT ARTIFACTS FROM "LITTLE ASH" CAVE.

tudinally, and is of the form reported by C. B. Moore from Indian Knoll in Ohio County.* This specimen seems to have been incised on the surface in an attempt to carve a figure which is, however, not interpretable. From the nature of the carving, it apparently was not done at the time of manufacture, but later, after the stone had been broken. The fragments of hematite gorget had been re-worked on the fractured face and polished to a surface.

Broken flint spawls were numerous in the deposit, and eleven nearly perfect arrow points were found. These were all found near the walls or about the edge of large boulders on the cave floor. These points are shown in Figure 27. They are of many types and from their position in the shelter it is difficult to ascertain their connection with the associated ash layers.

Very little pottery was found on this site. In fact, only on a very limited area near the outer rubble wall was any pottery found. These small shards were all on or near the surface and may well have been the shards from one or at most a very few

*Moore, C. B., *loc. cit.*

vessels. These shards are thin, well formed, gravel tempered, and of a curvature to indicate small vessels. The surface is either smooth or grass paddle marked. Since there were no pottery shards found throughout the general digging on this site, it may be concluded that these few shards are a very recent addition to the floor accumulation.

Against the walls of this shelter, there were found numerous shards of gourds which seemingly had accumulated near the wall and had found their way to lower levels along the wall face. It may be that the use of gourds instead of pottery by the dwellers in this shelter may explain the absence of any considerable amount of pottery remains in the ash deposit. Shards of gourds would, if scattered in the midden deposit hardly escape the action of fire. It was only therefore in places remote from the camp fires, as near the shelter walls, that gourd shards would be found.

"BIG ASH CAVE"

About one mile up Big Sinking Creek from the mouth of Cave Fork is the village of Fixer. Approximately half a mile west of the village of Fixer, in the eastern end of a long line of cliffs is a well known rock shelter. The floor of this shelter has an ash layer of average depth, five and one-half feet over a frontage of ninety-eight feet. An additional frontage of forty-eight feet is covered with large rocks which have fallen from the face of the cliff. Because of the great size of this shelter and the depth of the ash, it has become known locally as "Big Ash Cave," "Big Ash Rock House," or simply "Big Ash." This shelter had an almost due eastern exposure. The floor was very dry under the shelter and local report indicated that the shelter had been used by former owners of the land to store potatoes over winter. It is reported that holes were dug in the ashes and the potatoes placed below the frost line where the potatoes would thus remain during cold weather in good condition. It was apparent after examination that this practice had been more extensive than at first thought. Many holes had been dug near the rear wall to the depth of four feet and in the ashes thus stirred up, all record of their original disposition had been destroyed. It is believed that this disturbance is the cause of the absence of textiles on this site comparable to those reported herein from other similar sites. So great had been the accumulation of ash in this shelter that it had been pushed

outward and had formed a talus which extended much beyond the edge of the overhang. This portion was therefore subject to all the usual weather conditions. In this soil, vegetation had started many years ago and there were several tree stumps of considerable size as well as a covering of second growth along the outer border of the shelter floor. At the front of this accumulated debris under the cliff, an oil well was dug when the Big Sinking Pool was opened, and a service road was graded just along the base of this deposit. Appearance would seem to indicate that when this road was built some ten years ago, considerable material from the foot of this talus had been cut out and thrown down the hill to form the road bed. (Figure 28.) Excavation was begun on a thirty-



FIG. 28. ROCK SHELTER IN BIG SINKING CLIFFS.

five foot front at the foot of this talus and carried down to undisturbed earth the earth being thrown outward and down the hill, the trench advancing the full width of thirty-five feet toward the face of the rock.

The vertical depth of ash at the foot of this slope was only two feet which very clearly showed that this area had been disturbed when the road was built. As soon as excavation started at the foot of the talus, individual human bones were encountered, including a radius, the head of a femur, fragments of skull and

some earpal bones. These were scattered throughout the outer slope, were in poor condition, and were at all elevations. All of this portion of the bank was in the open and exposed to the action of the elements. Scattered human remains continued to be found till the dry ashes were reached under the shelter, where they stopped completely. These findings would seem to indicate that burial here in prehistoric days took place, not in the actual shelter but in and under the accumulated talus of ash and debris pushed out over the edge of the cliff floor. Because of the action of the weather, and the roots of vegetation, destruction of all bone artifacts as well as skeleton material would be very rapid. It would appear further that the removal of material from the foot of this slope when the road was built allowed the remaining face of the talus to "slip" and "erawl." This is believed to account in part for the scattering of the human remains. No human remains were encountered on this site except in this outer slope.



FIG. 29. TRENCHING "BIG ASH" CAVE.

Figure 29 taken from an adjoining cliff face above the floor level, shows the trench advanced on a thirty-five foot frontage, just reaching the top of the slope and the edge of the dry ashes. The slide of excavated sand and ashes thrown outward had, at this point a slope height of thirty-two feet. Figure 30 is a draw-

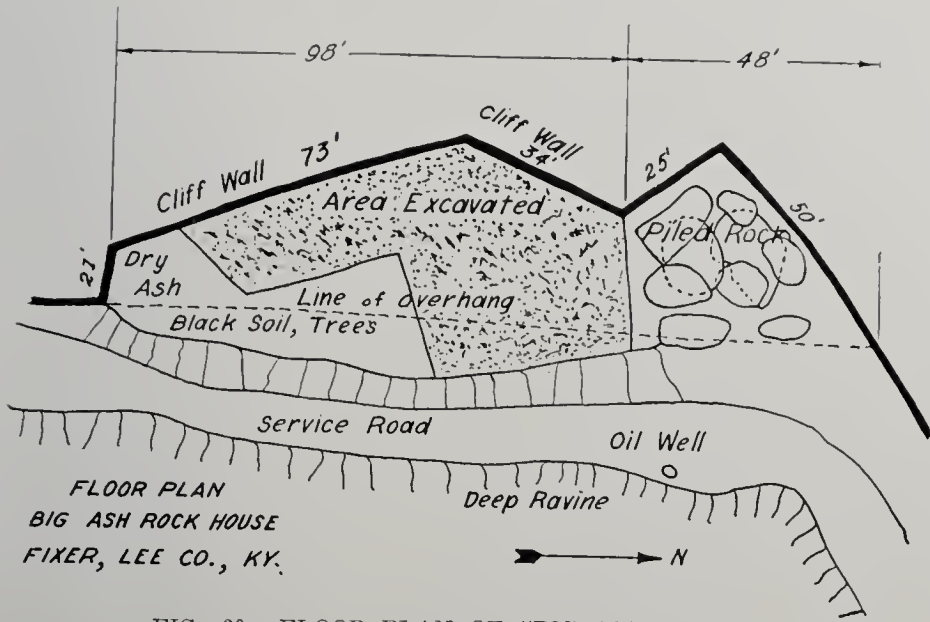


FIG. 30. FLOOR PLAN OF "BIG ASH" CAVE.

ing of the ground plan of the "Big Ash Cave" showing area excavated. Figure 31 shows the trench advanced nearly to the rear wall of the shelter.



FIG. 31. EXPLORING ASH BEDS IN "BIG ASH" CAVE.

During the excavation, where there had been previous disturbance of ash bed, as mentioned above, the ash was loose, very dry and dusty to shovel. The undisturbed portions were compact, dry, and much easier to handle without excessive dust. This undisturbed ash showed clearly that it had been laid down in layers of varying thicknesses, over areas from five to fifteen feet broad. The ash layers here, as in the Wilson Hollow Cave, alternated with layers of sand and clay. There were discovered a number of these layers at different depths which contained closely packed leaves of oak and sassafras which are believed to represent ancient beds. Being covered with ash and sand they were preserved, and their location and extent was easily made out by examination of a vertical section of the ash bank. These layers were about an inch thick and covered some twenty square feet in area. Two charcoal pits, similar to those previously reported, were discovered on the site but both had been partially disturbed by previous digging.

Animal bones and mussel shells occurred throughout the digging but not in such great numbers as at Wilson Hollow. Near



FIG. 32. BONE ARTIFACTS FROM "BIG ASH" CAVE.

the center of the shelter on the sandstone floor a large boulder some ten feet long had fallen before the deposit of ash. On this boulder were found five complete skeletons of wild turkey. All parts of these skeletons were in natural anatomical position and the skeletons appeared to have been placed side by side and covered with ashes. We can suggest no plausible explanation as to the reason for the apparently purposeful burial of these turkey skeletons.



FIG. 33. FLINT ARTIFACTS FROM "BIG ASH" CAVE.

Bone awls of the usual type were found here, but again not as numerous as at other sites. One awl made from an ulna of deer was found, the only one of this form from an ash cave in this group. Figure 32 shows the bone artifacts from this site. A single astragalus of deer was found drilled through the center. The most interesting bone implement found was a section of deer horn, two and one-half inches long, polished with squared ends, drilled longitudinally, as shown in Figure 32. The basal end of the outer edge had eight notches. It might have been a handle, but it is quite similar in form and size to the so-called "net

spaceers'' found by C. B. Moore at Indian Knoll, in Ohio County in the shell mounds in Green river.*

Figure 33 shows the arrow points found in the general digging on this site. In general they were crude, imperfect, and showed evidence of fire, having been rejects thrown in the ashes.

No hominy holes were found at this site but from the bottom of the ash layer, against a wall, a short, bell shaped pestle was recovered. This pestle is a hard limestone, showing long usage. It is shown in Figure 34. From an inspection of the wear on this

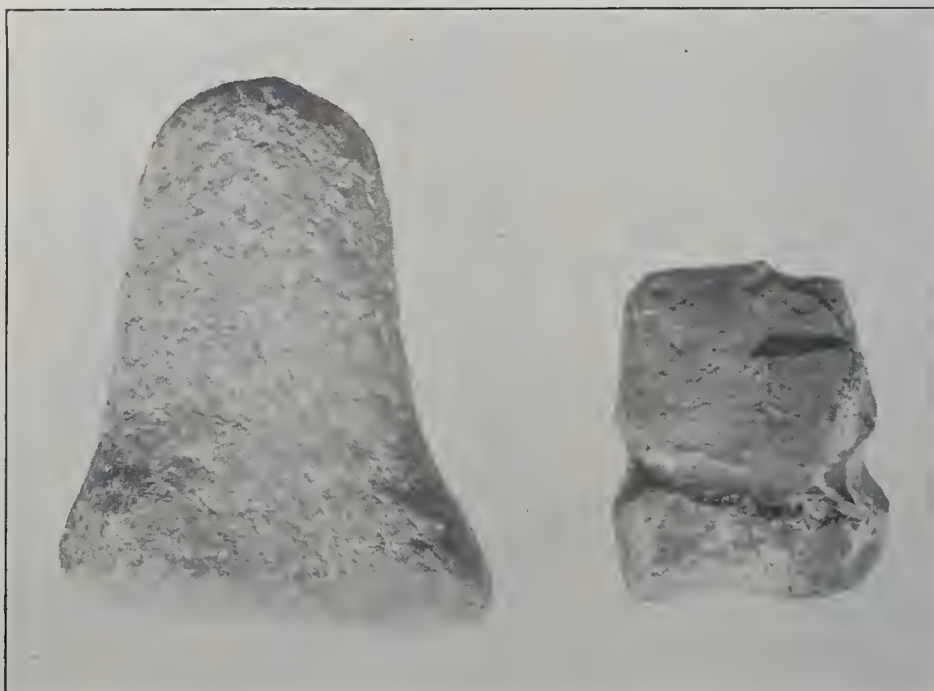


FIG. 34. PESTLE AND AX FROM "BIG ASH" CAVE.

stone, it was used pointed end down, i. e., it is a typical hominy hole pestle.

While working at this site, Mr. O. W. Talbot presented a small, full grooved stone ax, (Figure 34,) which he had previously dug from this site. A large portion of a sandstone bar gorget which is shown in Figure 33 was found in the edge of the ash bank among the scattered human bones. At the foot of this talus at a depth of three feet on the undisturbed sand, a large sand

*Moore, C. B., *loc. cit.*

whetstone, shown in Figure 35, was discovered. This shows much heavy usage, the grooves being more than an inch deep worked on both sides. The pit marks shown were caused by being struck twice with the pick before being uncovered.



FIG. 35. WHETSTONE FROM "BIG ASH" CAVE.

Fragments of pottery were scarce on this site, and as at Wilson Hollow, they were all superficial and appeared only on one restricted area, as if one or more vessels had been broken near the cliff wall. The fact that there was practically no pottery found throughout the general digging strongly suggests that there again the very small amount of pottery found is a later introduction, possibly by a very transient visitor to this site. Certainly pottery was not commonly used during the deposit of the great ash layer. Shards found, shown in Figure 36, were all hard burned, and many showed grass paddle marks.

Altogether, the "Big Ash Cliff" was a disappointing site as measured by the comparative dearth of skeletal material and artifacts, in proportion to the amount of excavation, yet it is believed that its information, rightly interpreted, is as important to the



FIG. 36. POT SHARDS FROM "BIG ASH" CAVE.

solution of the general problem as any other site examined in Lee County.

CAVE FORK HILL CLIFF

About three-fourths of a mile east of the southern end of Wilson Hollow, the road which follows Cave Fork Creek from its mouth on Big Sinking turns sharply to the south, leaving the creek bed and winding its way up Cave Fork Hill to reach the ridge above. This road is one of the three entrances to the valley of the Big Sinking, the only other two being the roads down Bald Rock Hill and down Fixer Hill.

Facing Cave Fork Hill, on the east, and not more than 100 yards distant from the road, a cliff rises with a vertical wall some seventy-five feet high, heavily wooded, and located on a ridge about 250 feet above the level of Cave Fork Creek.

Under this eliff, in sight of the road up Cave Fork Hill, is a rock shelter about thirty feet wide and forty feet deep, formed by the falling out of great stones from the vertical eliff faee. It is located as Site Number 3 on the map of Lee County. (Figure 2.)

This shelter showed unmistakable evidence of prehistoric occupation. The floor was ash covered, and animal bones were scattered on the surface. A few pot shards similar to those in Wilson Hollow were picked up on the surface. An examination of this site by trenching the floor, showed the ash layer to be less than a foot in thickness. The conformation of the overhanging cliff in its constant change by the falling of stone, had produced a surface drain for water from the ridge. Water flowed down the surface of the rocky face of the cliff and found its way well back into this shelter. Thus the floor has become damp and any material there probably decayed. It is probable that this damp condition of the floor is a relatively recent occurrence and that when occupied in prehistoric times this shelter was as dry as any other such shelter. Because of the condition of the floor and the thinness of the ash layer no extensive excavation was undertaken.

This site is of interest, however, as one of the large boulders fallen from the shelter roof contained a good specimen of hominy hole. An unusual feature was the engraving of human foot prints and bear tracks on the surface of the boulder. (Figure 37). The hominy hole in this stone is undoubtedly prehistoric; the age of



FIG. 37. HOMINY HOLE AND CARVED FOOT PRINTS.

these other carvings is problematical. The human tracks appear to be old and of such form as would have been familiar to the Indian or any other man not accustomed to the wearing of shoes. However, there is nothing to positively determine their age. The carving seems to have been done with a blunt-pointed chisel. It is not impossible that such result might have been accomplished by the use of flint chisels.

BUCKNER HOLLOW ON LITTLE SINKING

While excavation was in progress at "Big Ash Cliff," Mr. Richard Morrison of Fixer, Kentucky, who is employed on the Hudson and Collings Lease, reported an open rock shelter in Buckner Hollow, on the property of Flahaven Land Company, one and one-half miles southeast of Fixer. Mr. Morrison, with his brother, had discovered this shelter in a rather inaccessible portion of Buckner Hollow, which lies in the drainage area of Little Sinking Creek. He had procured from this site grass moccasins (Figures 38 and 39) and an arrow set in its shaft. (Figure 40.) These specimens were procured from Mr. Morrison who conducted a party to this site. This part of the valley of Little Sinking Creek

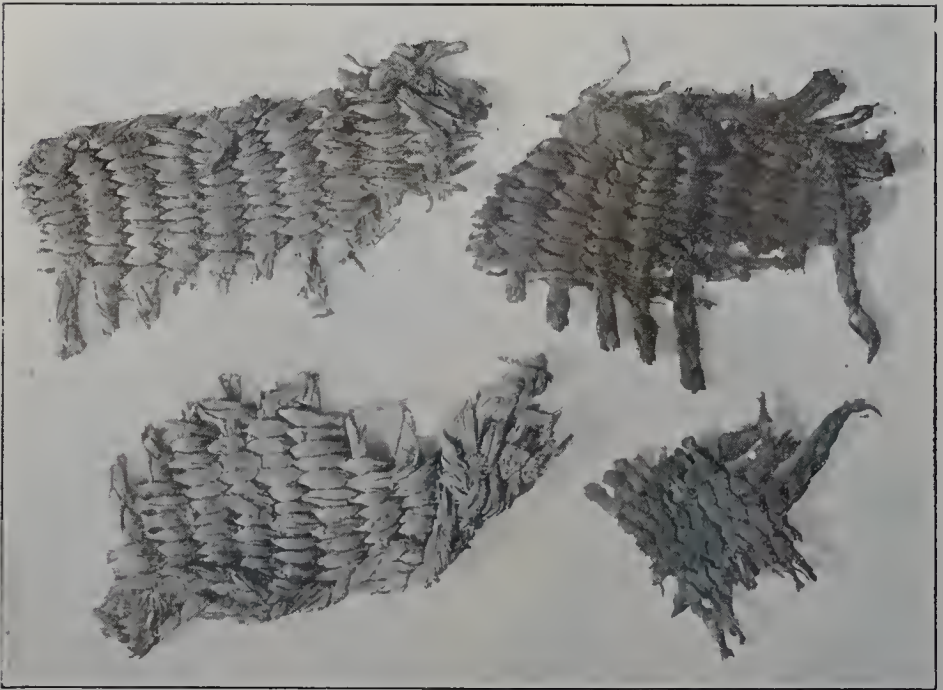


FIG. 38. FRAGMENTS OF GRASS FABRIC FROM BUCKNER HOLLOW.

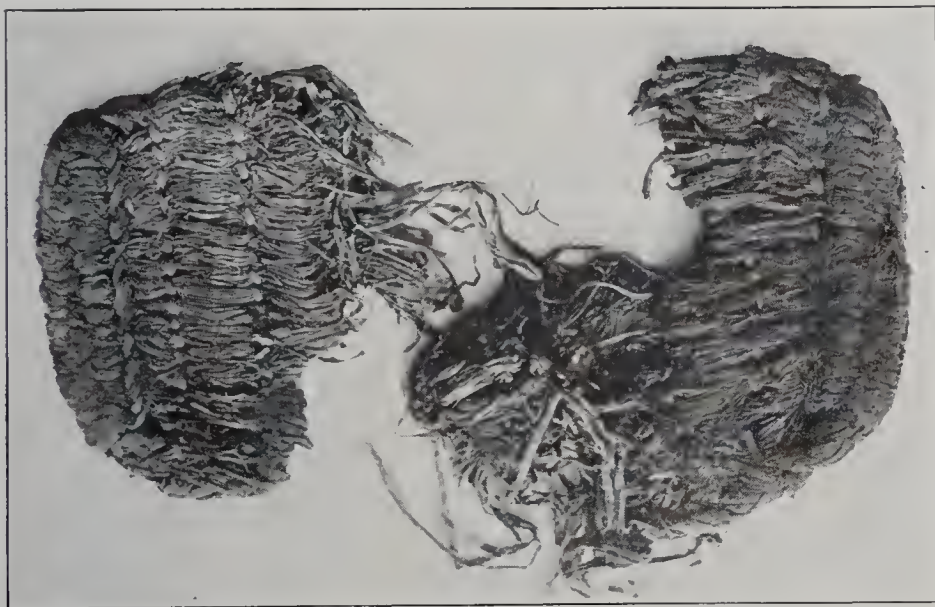


FIG. 39. PORTIONS OF GRASS MOCCASINS FROM BUCKNER HOLLOW.



FIG. 40. BONE AND WOOD IMPLEMENTS FROM BUCKNER HOLLOW.
In this figure is shown an arrow-point still attached to the wooden shaft.

lies outside of the Oil Pool, on Big Sinking, and the country, therefore, has not been developed in the same way. There are very few people living in this region, and there is, therefore, little occasion for roads or trails. Access to this particular shelter is difficult from the direction of Fixer. An approach up stream from the valley of Little Sinking Creek might be easier. This shelter, one of many such, in this heavily timbered valley had an eastern exposure and was formed by an overhanging ledge some sixty feet long, and had a floor depth of about thirty feet. About half of this area was found much disturbed by a somewhat recent occupation of this site as a moonshine still. Trenches had been dug for two large boilers, rock walls laid up, and the excavated earth thrown back covering a large section of the cave floor. Recent fires had also destroyed much of what may have been on the surface. A large pile of firewood covered a considerable portion of the remaining floor area.

Under a portion of the ledge, where the clearance was not more than four feet and therefore not suitable for the purpose of

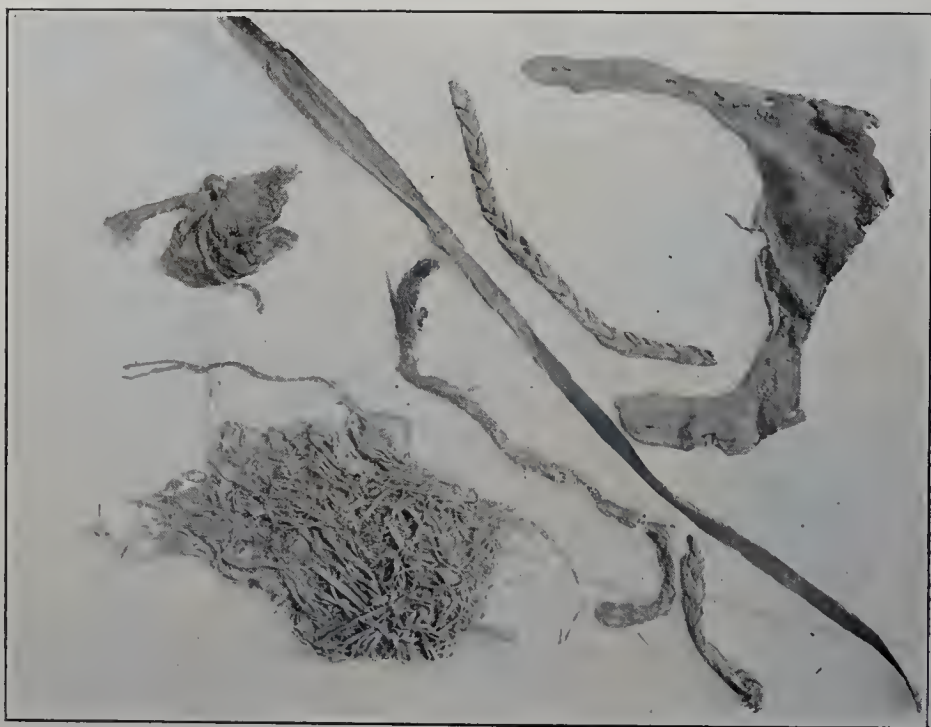


FIG. 41. SCRAPS OF TEXTILES AND LEATHER FROM BUCKNER HOLLOW.

recent occupants, the floor was found undisturbed except that there had been considerable digging by Mr. Morrison and others who had been previously exploring this site.

Ashes covered the floor to a depth of about one foot. These ashes rested on and were mixed with the yellow sand of the cave. Beds of leaves and moss intentionally constructed were evident in two places under the ledge. In these beds were found scraps of textiles, fragments of leather and bits of plaited and twisted rope of prehistoric manufacture. Figure 41 shows some of these artifacts together with a scrap of leather with holes for lacing.

The visiting party gathered on the surface a number of pot shards, many gourd shards, a worked deer horn, and in one of the deep beds, a number of broken arrow shafts, with another point, one shaft still having the notch in the end. (Figures 41 and 42.)

Preliminary excavation at this site revealed the ash layer as shallow, not extensive, and already partially disturbed by hunters. Since half of the shelter floor had been completely changed by the



FIG. 42. POT SHARDS FROM BUCKNER HOLLOW.

erection of the still, it was thought wise for these reasons and others in themselves sufficient, not to undertake extended exploration of this site. It is highly probable, however, that because this region is so sparsely settled, and is so difficult of access, that a careful search of this valley would reveal other larger and undisturbed sites having great archaeological interest.

FABRICS

Since, so far as we know, very few perfectly preserved specimens of fabrics have been found in the Mississippi Valley, it seems desirable to describe the Lee County material in some detail.

Five materials seem to be represented in these fabrics: first, a shredded fibrous bark; second, the stems and leaves of some tough wiry grass; third, flat strips of bark; fourth, flat pieces of corn husk or stalk; and fifth, narrow strips of skin or leather.

In the manufacture of articles from fabrics, three steps are of course necessary. First, the material to be used must be made into some sort of strands or threads suitable for a warp and weft. Second, these threads must be woven to form the fabric. Third, the fabric must be fashioned into the moccasin or bag or quiver or other finished product. With the actual material before us, it is possible to determine the methods used in each of these steps of the process. The threads may be separated, the fabric unraveled, the methods of weave worked out and the technique of the process discovered. One part of the process must, however, remain conjectural. We have no way of knowing how the threads were held during the actual weaving—what type of primitive loom was used or how the manipulation of the warp and weft was accomplished. But the results are very evident.

Taking up in order the steps in the preparation of fabric as indicated by the Lee County material, we find that we have four types of thread or cord represented. In one a single strand or bundle of fibers is used straight, without any attempt at twisting or plaiting. In another, two strands of fibers are tightly twisted to form a cord very much resembling a modern two-ply rope. A variation of this, but really the same method, is the use of three or four strands. Both three and four ply strings are represented in the ash cave material. In the third, two strands of fibers are

very loosely twisted so that the turns are far apart. In the fourth, three stands are plaited or braided, as a girl braids her hair—or as she formerly did. A variation of this method is represented in one string which is braided from four strands—much as a "black-snake" whip is braided by modern teamsters. For purposes of description these types of threads will be called (1) straight or *untwisted*, (2) tightly twisted or *close rope*, (3) loosely twisted or *loose rope* and (4) *braided*. (Figure 43.) By any of these

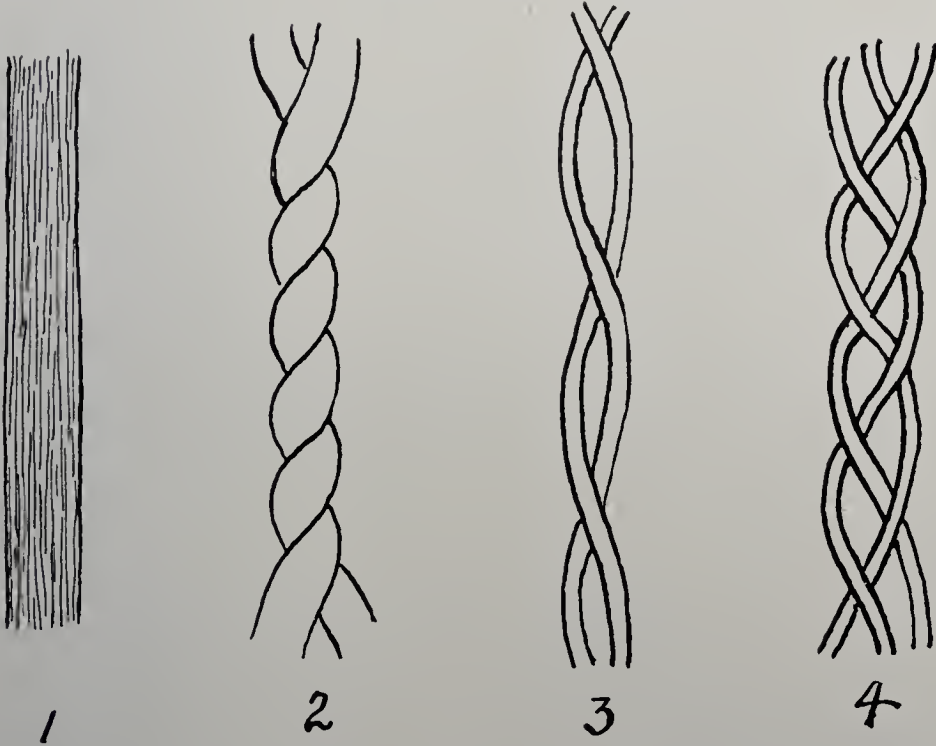


FIG. 43. TYPES OF THREADS USED IN WEAVING.
(1) Untwisted; (2) Close rope; (3) Loose rope; (4) Braided.

methods a string could be made either of large or small diameter. In fact, some are dainty, tightly twisted threads not over one millimeter in diameter, while others are heavy rope-like cords a half inch in cross section.

With these various types of strings, threads or cords, used as warp and weft, the weaving was accomplished and several rather distinct patterns are represented. It is interesting to note that some of these patterns or types of weaves are identical with

those worked out from impressions on pot shards and described in a previous report.*

The more important of these weaves may be described as follows:

THE BASKET WEAVE

The basket weave is a simple "checkerboard" design in which the warp and the weft alternately cross each other. In fact, in this pattern it would be difficult to state which is warp and which

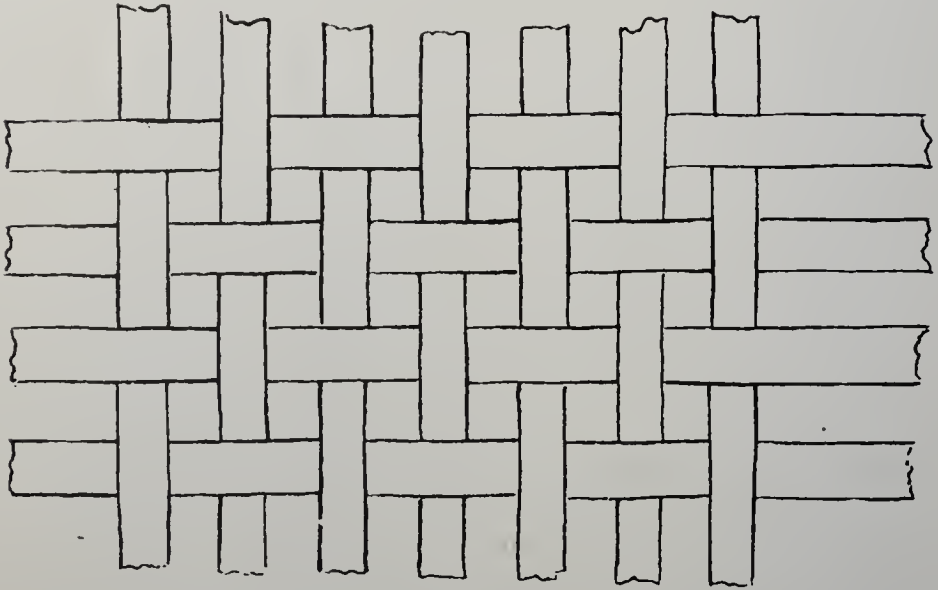


FIG. 44. DIAGRAM OF BASKET WEAVE.

is weft since both are broad flat ribbons of bark and either series might have been the lengthwise threads. The pattern gives a regular basketwork design with a rectangular mesh averaging about eight mm. in diameter. (Figure 44.)

The only specimen of this weave is a fragment of considerable size (9x3 inches) with no suggestion of the article of which it formed a part.

MOCCASIN WEAVE

This weave which is found as the dominant pattern in all of the moccasins is a simple variation of the basket weave in which both the warp and the weft are thick untwisted strands and the

*Webb and Funkhouser, *The Williams Site in Christian County*. 1929. pp. 16-17.

weft is double, the lower weft strand alternating with the upper in crossing the warp strands, and the weft rows are widely separated while the warp strands touch each other. This makes a

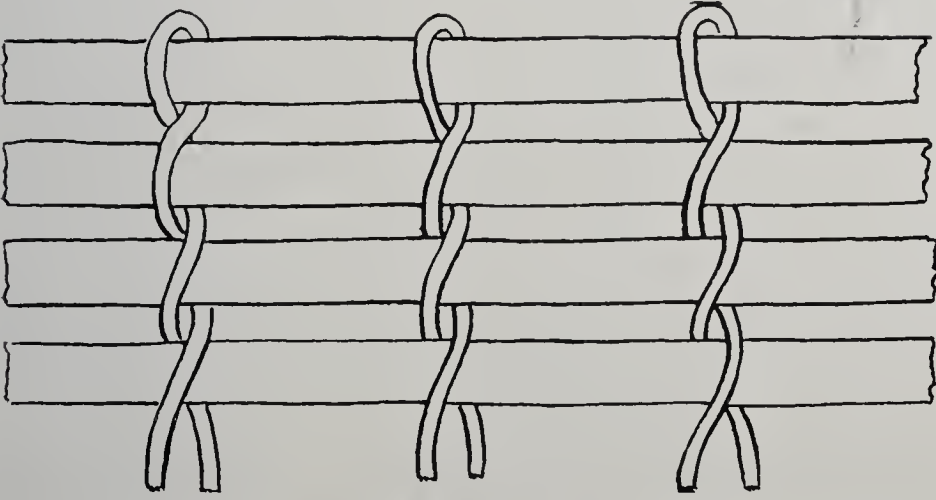


FIG. 45. DIAGRAM OF MOCCASIN WEAVE.

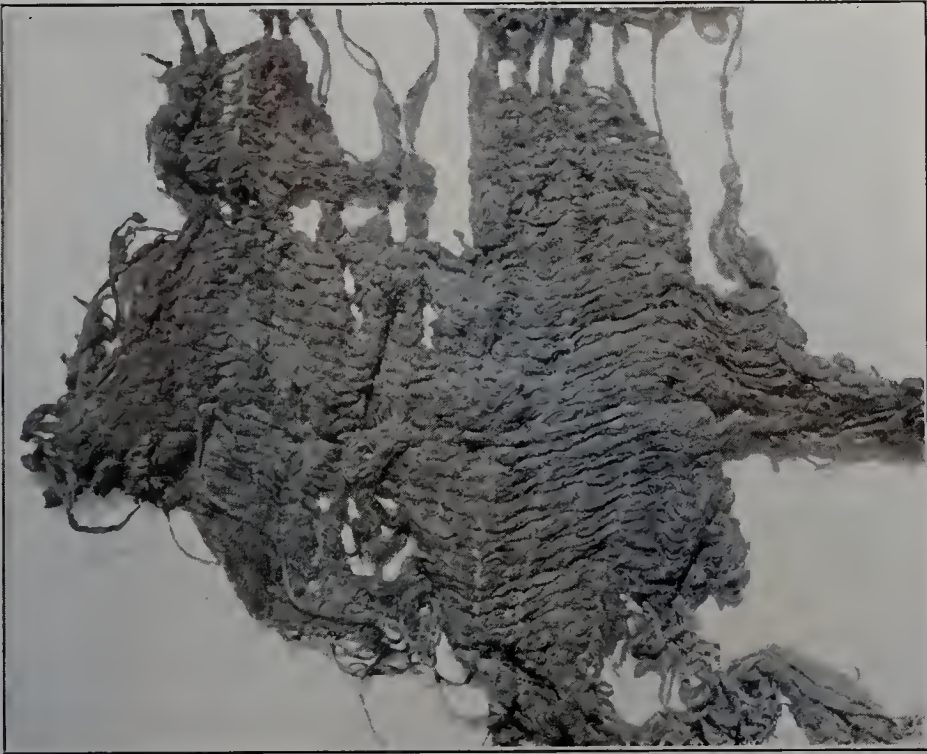


FIG. 46. PORTION OF MOCCASIN SHOWING MOCCASIN WEAVE.



FIG. 47. DETAIL OF MOCCASIN WEAVE.

soft thick fabric probably well suited for footwear. In this weave the selvage edge is made by doubling the weft strand back upon itself to make the double weft row. Also, as will be described later, two of the warp strands and the weft strand might be continued out from the edge of the moccasin and braided together to form a latch to go over the instep. (Figures 45, 46 and 47.)

CHEVRON WEAVE

This is another weave found commonly in moccasins and in fragments of fabric of conjectural purpose. It has been described and figured by Orchard from material from Kentucky caves* and we are adopting his nomenclature.

In this weave the weft is composed of two strands which alternate with each other in passing under and over the warp and the parallel weft rows are so woven that the opposite turns point toward each other giving the interesting chevron pattern. The weft rows are pressed closely together and the strands are of soft

*Orchard, William C., *Sandals and Other Fabrics from Kentucky Caves*. Indian Notes and Monographs. pp. 10-11. 1920.

untwisted threads so that the resulting fabric is very compact. (Figures 48 and 49.)

THE DIAMOND WEAVE

In this weave the warp may be either large close rope or braided and the weft is untwisted. The weft strands are large and loose and are woven alternately over and under the warp so

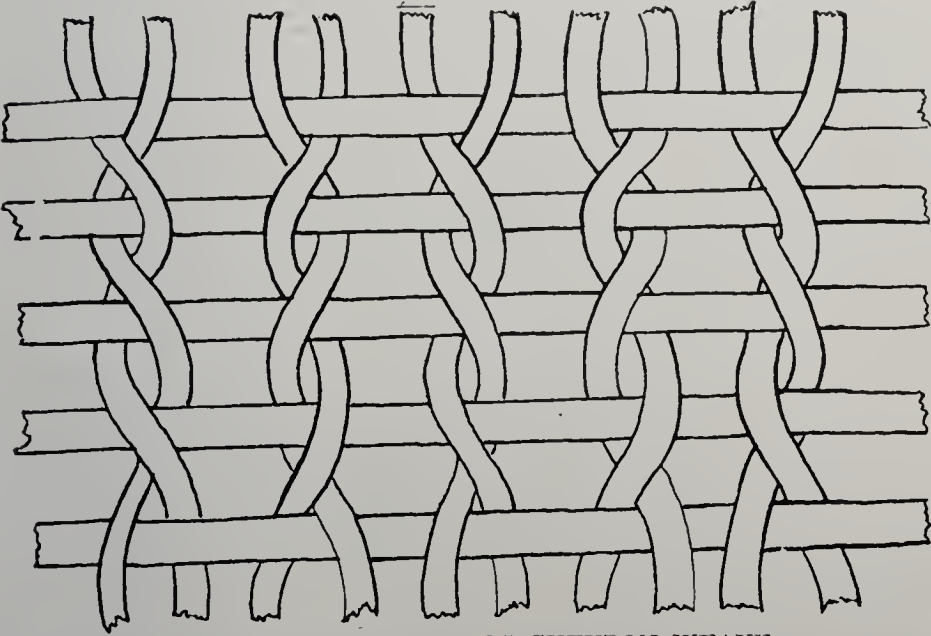


FIG. 48. DIAGRAM OF CHEVRON WEAVE.



FIG. 49. MOCCASIN SHOWING CHEVRON WEAVE.

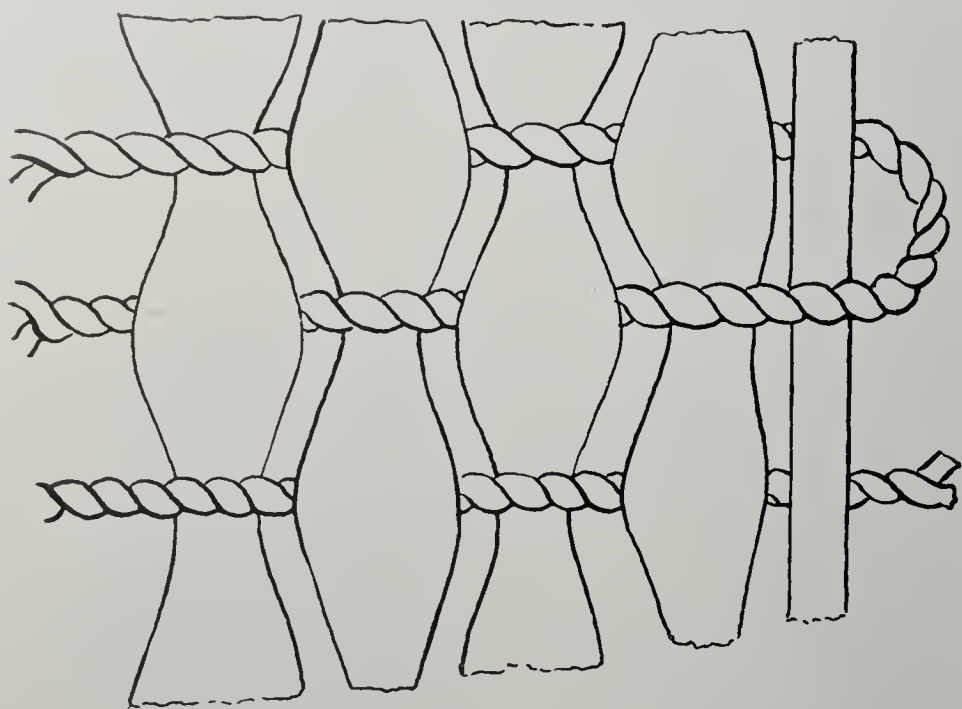


FIG. 50. DIAMOND WEAVE.

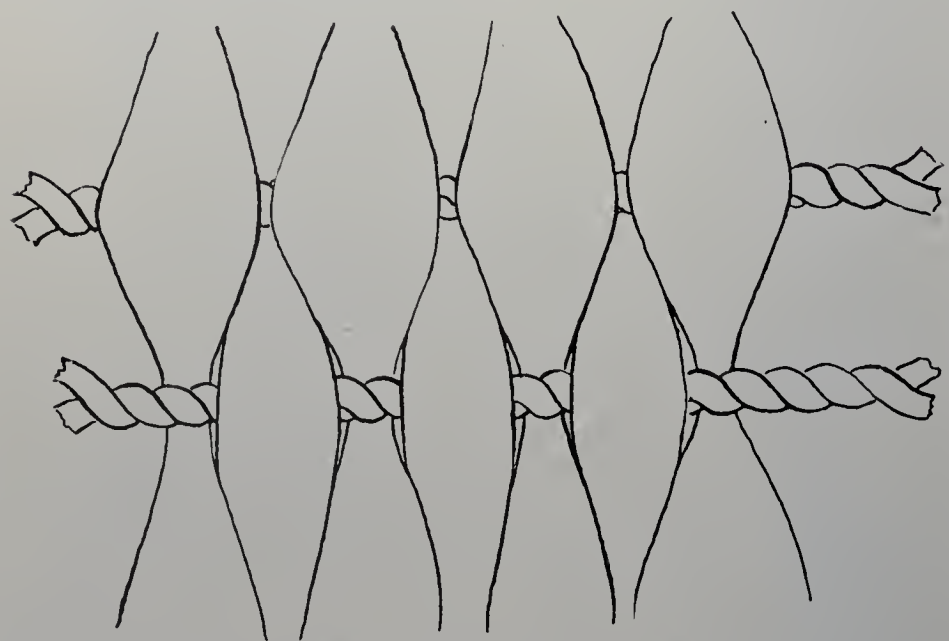


FIG. 51. DIAMOND WEAVE WHEN COMPLETED.

that when pressed tightly together the exposed bundles of weft have a diamond shaped appearance. This weave is found in two of the moccasins in that part of the fabric forming the middle of the sole and the sides and the same weave makes the sole of another of the moccasins while the upper parts and toe are of a different pattern. (Figures 50 and 51.)

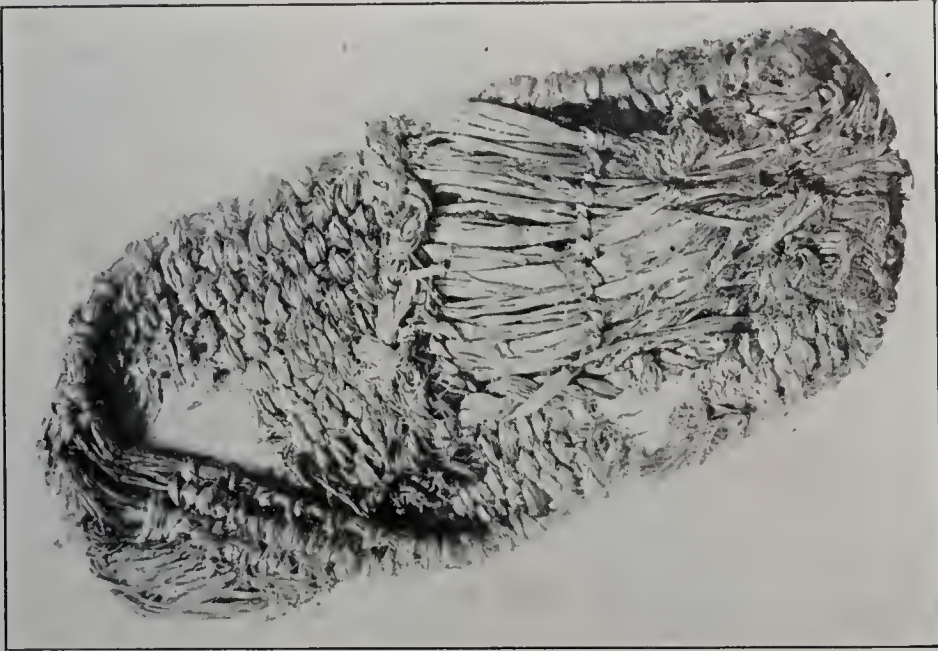


FIG. 52. MOCCASIN SHOWING DIAMOND WEAVE.

The selvage edge of this weave is formed by looping the warp back into the fabric and running a double weft through the loops. (Figure 52.)

NET WEAVE

In this weave the threads used are the small, hard, tightly-twisted two-ply, close rope type woven into a large open mesh with a knot at each intersection. The threads are exactly alike throughout the weave so that they can not properly be called warp or weft and the meshes are practically square. The knot is made by holding the two threads together and making a simple knot as would be done in tying a knot in a single thread. At the edge of the fabric each string end is doubled over and fastened with a single knot which prevents raveling. The result is a distinct fish-net appearance. (Figure 53.)

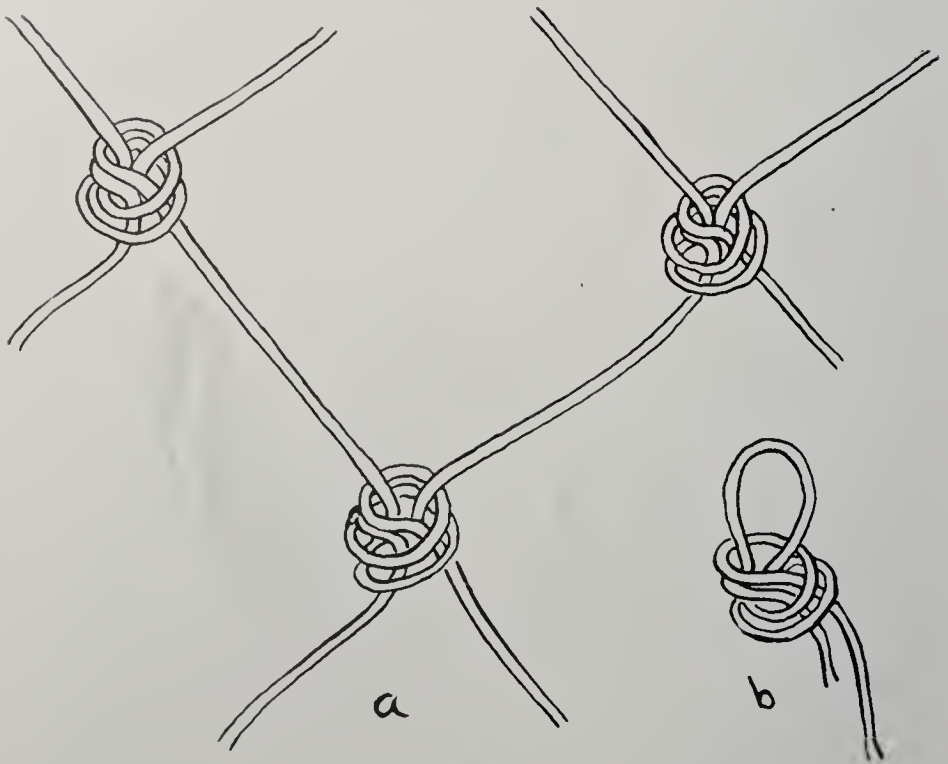


FIG. 53. DIAGRAM OF NET WEAVE.
(a) Detail of knots; (b) Knotted end of strand.

The best example of this weave from the Lee County material is a bag which is not unlike certain styles of meshed shopping-bags used today. The threads are about one mm. in diameter and the meshes seven mm. apart. (Figure 54.)

"ZIG-ZAG" WEAVE

In this weave both the warp and the weft are of the three-ply close rope type. The weft is double and one of the threads passes alternately over two and under two of the warp strands while the other passes under and over the same two, thus looping the weft threads and locking them together. Moreover, the next row of weft does not pass over and under the same two warp strands as the first but takes the alternate warp while the third row of weft goes back to the same series as the first. Thus the alternate weft rows engage alternate warp elements and the warp strands are pulled back and forth from one weft loop to another giving a zig-

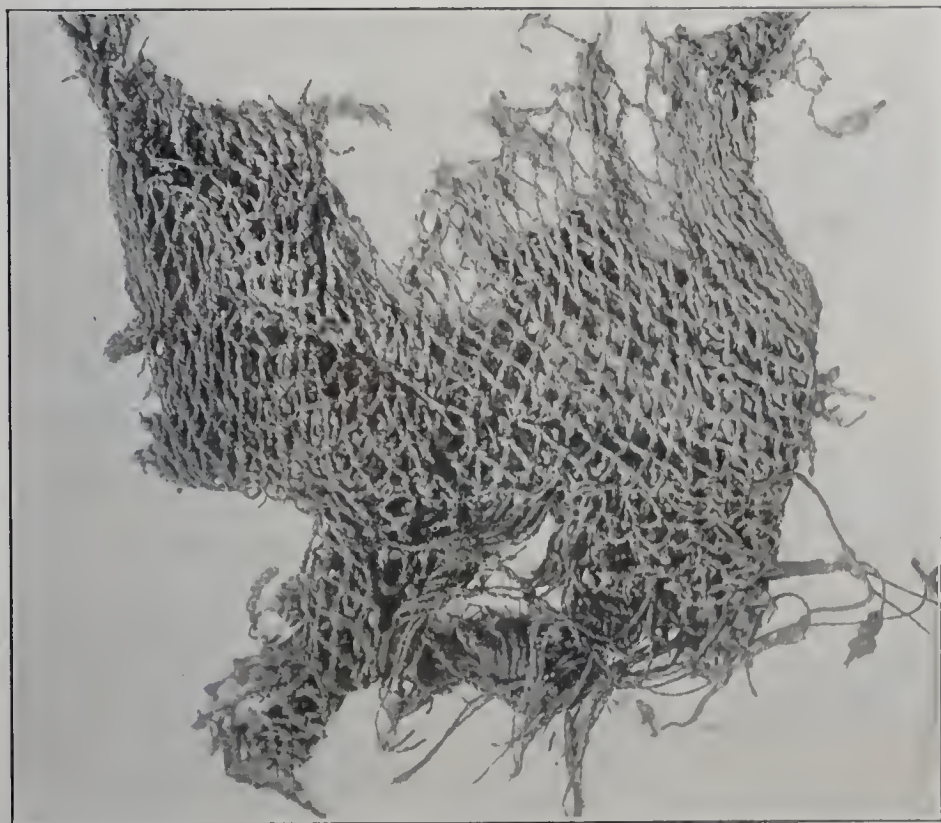


FIG. 54. MESH BAG SHOWING NET WEAVE.

zag" effect. This pattern has been previously reported* from Kentucky as indicated by impressions on pot shards and it is satisfying to note that the actual material verifies the theory which was advanced from a study of pottery marking. (Figure 55.)

The material from Lee County showing the zig-zag pattern consists of several pieces from some unknown article and a part of what seems to be a bag or quiver.

METHOD OF WEAVING

As we have stated, the exact method of weaving and the type of primitive loom used must be more or less conjectural although it is not impossible that artifacts may be discovered which will give us a clew as to the actual implements utilized in the process.

It is evident that the warp threads must have been kept straight and more or less taut in order that the weft might be woven

*Webb and Funkhouser, *The Williams Site*, loc. cit. p. 17.

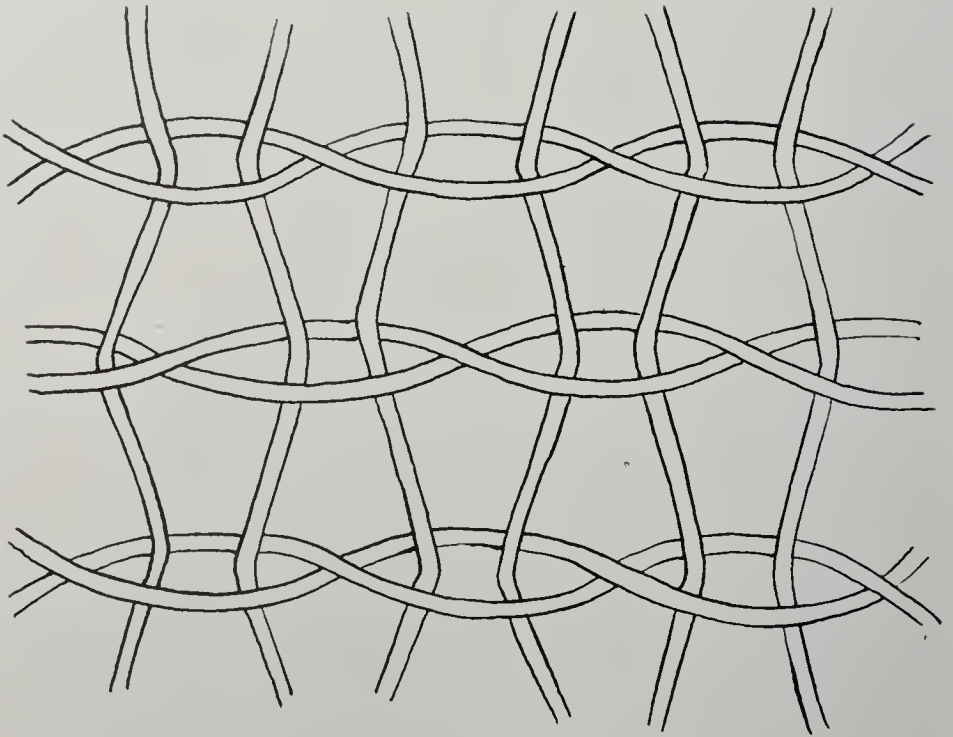


FIG. 55. DIAGRAM OF ZIG-ZAG WEAVE.

through in any orderly fashion. It is usually assumed that the warp was suspended from a horizontal stick or pole and the threads held in position by weights suspended from their lower end. The weft strands might then be passed across by means of a bone or wooden shuttle. This seems to be an entirely reasonable assumption, but, on the other hand, it may be that a far more elaborate apparatus was used of which we have no knowledge.

In fact some of the patterns are intricate enough to suggest more than a mere interlacing process. This is particularly true of those patterns such as the net weave in which each intersection of threads is knotted. We have tried to accomplish this ourselves by the method suggested and find it extremely difficult, although it must be admitted that practice would doubtless improve our technique.

MANUFACTURE

The fashioning of the fabric into the finished article seems to have been accomplished in two ways.

In the simpler method and the one which was apparently most

commonly practiced, the fabric was folded into the desired shape and the edges laced or sewed together or pieces of the fabric were sewed together to form the article. This has very evidently been done in the case of some of the moccasins in which the corners of a rectangular piece of fabric have been turned up and laced together to form the heel and the edges of the opposite end turned up and sewed together to form the toe. This, by the way, leaves a very pronounced projecting point at ends of the toe and heel caused by the "corners" in the fold. (Figure 56.) This is the case



FIG. 56. MOCCASIN WITH PROJECTING HEEL.

also in another type of moccasin in which the tread is made of a different fabric from the upper and in which at least three separate pieces have been fastened together.

An entirely different method, however, is shown in certain other articles which were without question woven in one piece. This is true, for example, of a bag (Figure 10) which is rather well shaped and is narrower at the top than at the bottom. The shaping of the bag is accomplished by the length of the weft threads which have been pulled up to narrow the upper portion. The last or upper weft strand is extended out of the fabric to form a tie string which when the bag was found was wrapped twice around the neck and fastened by simply pushing the end of the string under the loops. The same method is used in one of the

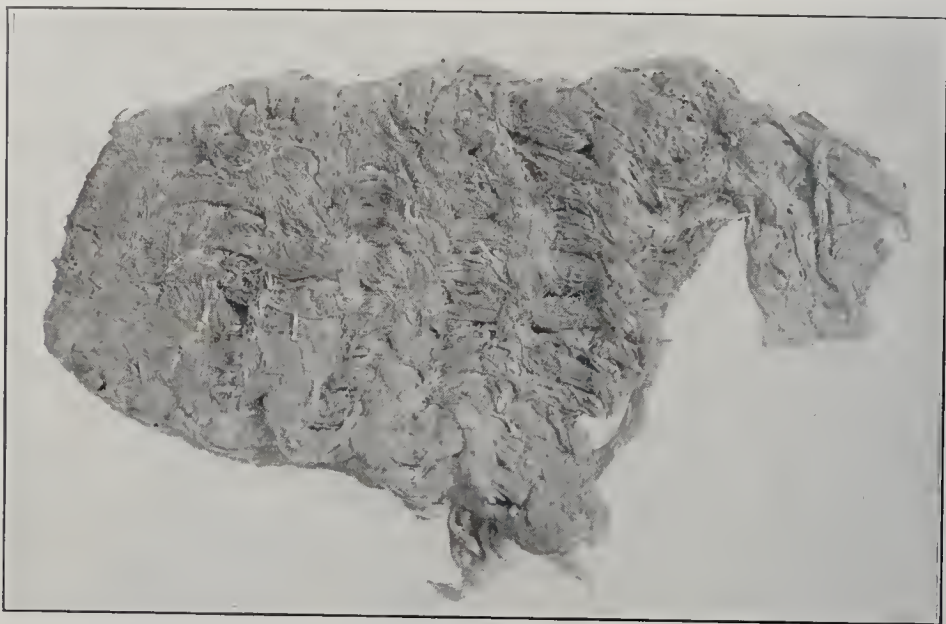


FIG. 57. FABRIC ARTICLE WOVEN TO SHAPE.

moccasins in which both heel and toe have been shaped in the weaving. This has been done by making a series of semicircles of the warp strands so that each strand turns back upon itself and this when drawn up pulls the fabric together to form a pocket. This is exactly the method which has been described* and figured by Orchard from Kentucky material. The warp strands were laid lengthwise of the foot, extending up one side and down the other and making a turn in the heel region. When the outside strands were pulled and shortened it gave the shape to the heel. We are inclined to think, moreover, that the shaping was actually done on the foot as the moccasin took shape, since the contour is strongly suggestive of the result of having been formed over a model. (Figure 52.)

Another interesting feature of some of the Lee County moccasins is that the warp strands at the end of the toe are extended out for four or five inches and very loosely connected by widely separated weft rows. This extended portion is then doubled back upwards over the foot to form a "tongue" much as in modern shoes. (Figure 56.) The sides of the moccasin on either side of

*Orchard, W. C., *Sandals and Other Fabrics from Kentucky Caves*, loc. cit. p. 13.

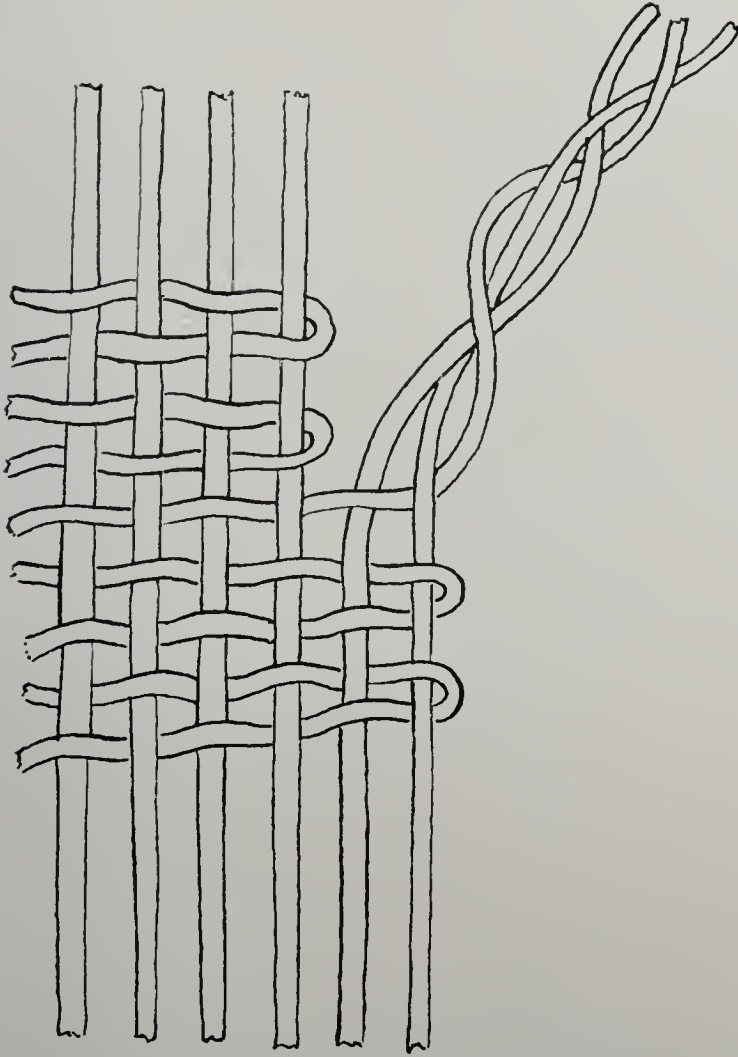


FIG. 58. DIAGRAM OF MOCCASIN STRAP.

the tongue have been tied together with braided string giving an effect not unlike a laced slipper of more recent times.

A rather unique method of fastening the moccasin on the foot is found in one specimen in which two of the warp strands and one of the weft are allowed to extend out of the edge of the fabric at about the middle of the moccasin and are braided together in a three-ply plait or strap to go across the top of the foot. (Figures 58 and 59.)

Several of the moccasins have been lined with grass, but this seems to have been merely a matter of stuffing loose grass into the

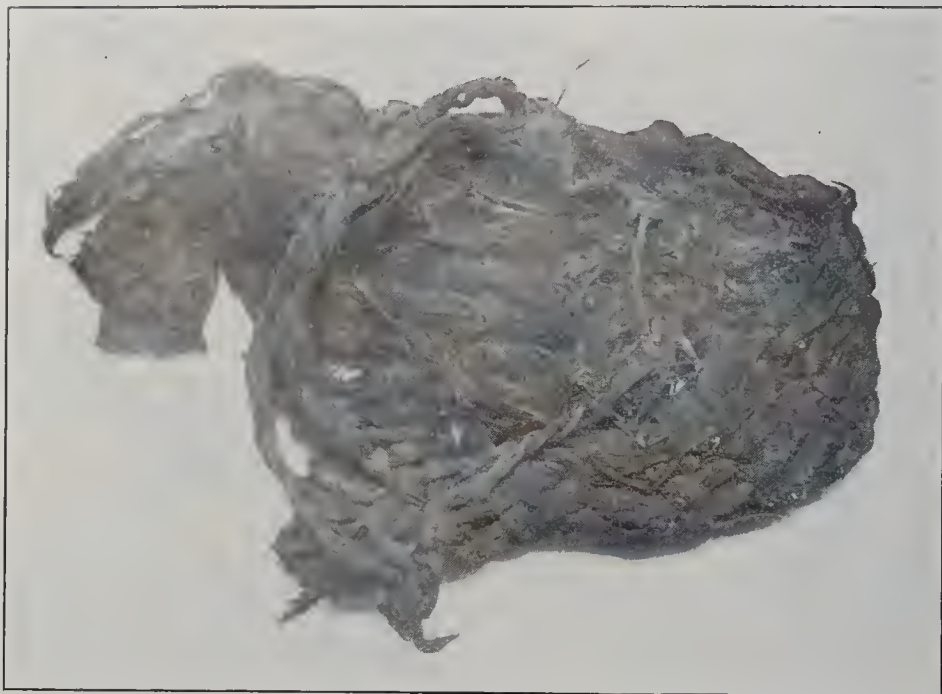


FIG. 59. MOCCASIN SHOWING STRAP ACROSS TOP.

article for additional comfort and had nothing to do with the manufacture of the article.

In the Lee County material many fragments of fabrics are found which illustrate the various types of weave which have been discussed but from which it is impossible to determine the nature of the article of which they were once a part. (Figures 60 and 61.)

SKIN

Closely associated with the fabrics so far as their probable use is concerned are the pieces of skin taken from the ash beds.

Some of these are of considerable size but all are very thin. All are irregular in shape and suggest nothing as to the article of which they once formed a part. They are apparently merely fragments of wearing apparel, wrappings or decorations. The leather is still soft and pliable, indicating an excellent method of tanning. One strip has a series of regular holes punched in the margin as though it had been intended for lacing with a thong; in fact several narrow strips of leather discovered may have well been used as thongs or cords.

The type of skins represented has not been absolutely determined. Persons familiar with leather who have examined them

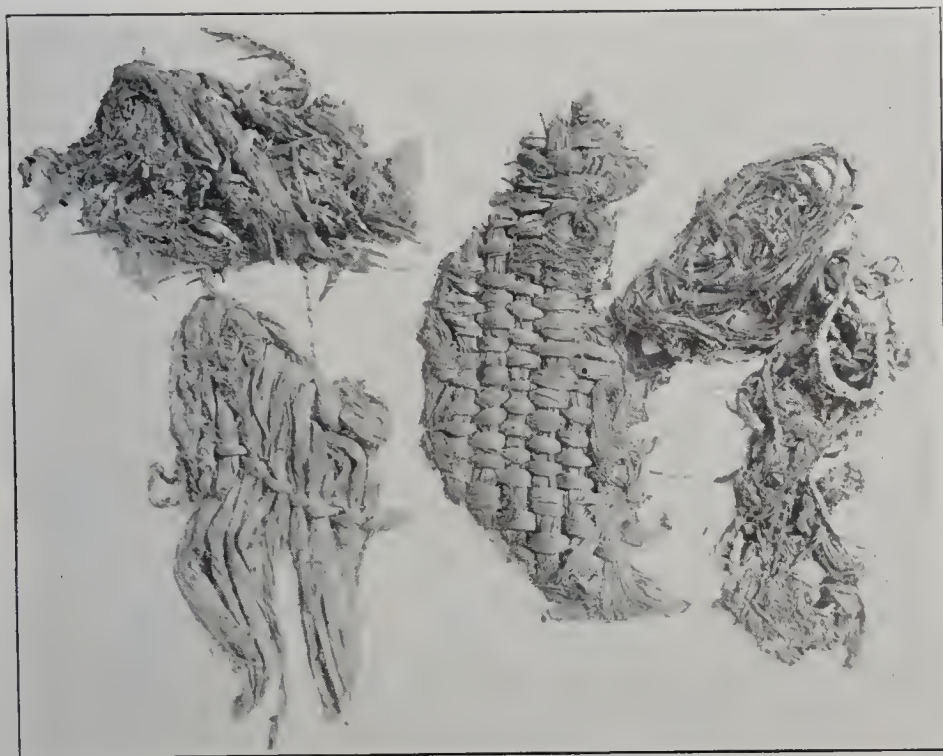


FIG. 60. FRAGMENTS OF FABRICS OF UNKNOWN ARTICLES.

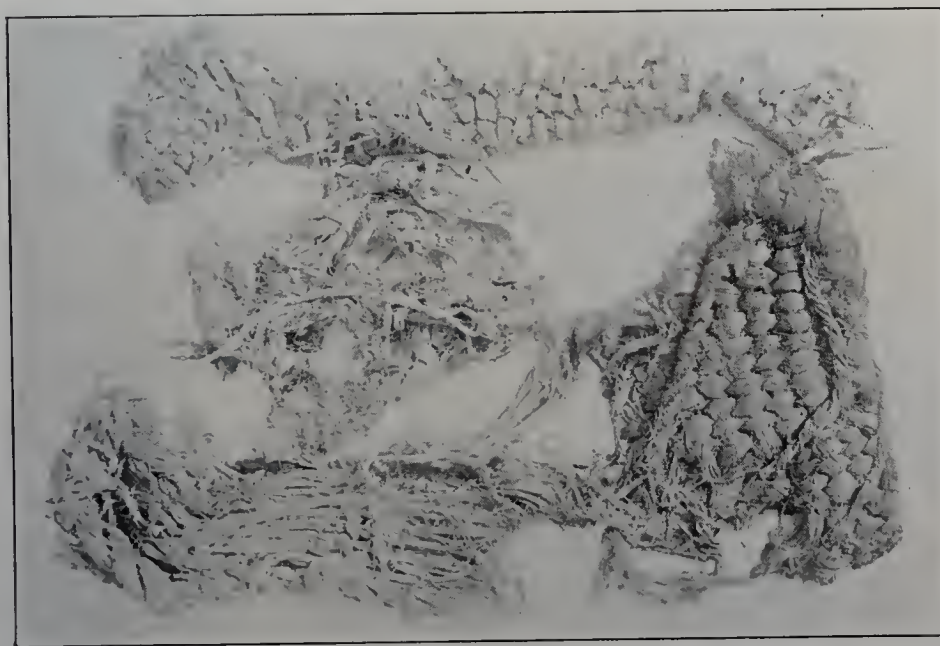


FIG. 61. TEXTILES SHOWING VARIOUS WEAVES.

hesitate to express a positive opinion. Several fragments seem to be deer skin and one is almost certainly moleskin.

SKELETONS

As has been stated, the skeletal material from the ash caves is largely in bad condition and it would be unwise to draw conclusions from the fragmentary remains available for study. Much of the material represents infants' and children's bones which were of course largely cartilaginous to start with and yields only partly ossified portions in the condition found.

One skeleton, however, found in "Little Ash Cave" in Wilson Hollow was in excellent condition and may be described, though whether or not this can be considered as typical is of course conjectural. The principal measurements of this skeleton are as follows:

SKULL:

Maximum length	165.00 mm.
Maximum width	142.00 mm.
Glabella-inion length	175.00 mm.
Height (basion-bregma)	140.00 mm.
Nasal length	48.20 mm.
Nasal breadth	27.90 mm.
Orbits:	
Maximum height	30.10 mm.
Maximum breadth	39.90 mm.
Occipital foramen:	
Length	34.10 mm.
Length Breadth	40.20 mm.
Sagittal cranial arc	355.20 mm.
Horizontal circumference	524.80 mm.
Cephalic index	86.66 mm.
Bicondylar breadth	125.60 mm.

LONG BONES—LENGTHS:

Right femur	44.30 mm.
Left femur	44.00 mm.
Right tibia	36.90 mm.
Left tibia	36.70 mm.
Right fibula	35.60 mm.
Left fibula	35.00 mm.
Right humerus	31.80 mm.
Left humerus	31.60 mm.
Right radius	22.80 mm.
Left radius	22.40 mm.
Right ulna	25.00 mm.
Left ulna	24.80 mm.

The bones of this skeleton are well ossified and represent a female of advanced age. All of the molars and premolars of the upper jaw had been lost earlier in life and the sockets entirely healed over, except the right third molar. In the lower jaw the full complement of teeth was present except the first molar on the left side. However three incisors and the left canine were shaken out of their sockets in excavation and do not show in the photograph (Figure 62). All of the teeth are very badly worn.



FIG. 62. PREHISTORIC SKULL FROM WILSON HOLLOW.

ANIMAL BONES

Animal bones were abundant in most of the shelters and have been mentioned in the preceding discussion. All seem to represent the usual kitchen midden material except the one case in which there had apparently been the bone burial of a dog and in another the burial of entire skeletons of turkeys. The species represented are the usual forms used for food, namely, deer, elk, bear, wild turkey and fish. It seems rather remarkable that no buffalo bones were found at any of the Lee County sites. Buffalo bones have been found in large numbers from other sites all over Kentucky but no evidences of this animal were found in the kitchen midden material from the ash caves. Whether this means that the buffalo did not inhabit this part of the country, or whether it had become extinct in the region at the time of the habitation of the caves or whether the animal was too large to be commonly secured as food is of course conjectural, but its absence is worth noting.

The usual number of mussel shells were encountered which were doubtless refuse from camp-fires. A few of these showed evidence of having been worked and were apparently artifacts for handling food or were used as ornaments.

A rather unusual number of terrapin shells were encountered. These like the mussel shells may represent the use of the animal as food or may indicate the use of the shells for holding food. No worked shells, indicating ornamentation, such as are rather common in other Kentucky sites, were found.

LOCAL COLOR

One of the most interesting aspects of investigation in the mountain region of Kentucky is the contact with the inhabitants of that region, which always proves rich in opportunity to secure information regarding mountain traditions and customs. These people are for the most part of pure Anglo-Saxon stock, are extremely keen in their wit and straightforward in their thinking, of high intelligence although of course often uneducated. Their isolated position has allowed them to retain in their language and customs many features which date back to Elizabethan times.

Strangers in the mountains, especially if engaged in archaeological work, are likely to be suspected either of being revenue officers or of searching for "treasure." The cause of the first suspicion needs no explanation to those familiar with mountain life but the second may not be so evident since it refers to the peculiar tradition regarding "Swift's Silver Mine."

'Swift's Silver Mine'

One of the most interesting of the traditions of the mountain region of Kentucky is that of "Swift's Silver Mine." According to this tradition a certain John Swift about the middle of the eighteenth century discovered a wonderful silver mine somewhere in the eastern mountains of Kentucky from which he secured fabulous quantities of native silver. A great furnace is supposed to have been built somewhere near the "Breaks of the Big Sandy River" and long packtrains of precious metal are alleged to have been brought out of the mountains. The story varies in many details according to the teller but is always rife with murder, strife, clandestine meetings, secret pacts with Indians and other thrilling and often blood-curdling adventures. At Swift's death or mysterious disappearance—for the stories differ as to the final episode—the location of the mine was lost and has never been rediscovered or, as others would have it, the secret is carefully guarded by persons now living or is handed down from one generation to another in a certain tribe of Indians who occasionally make mysterious visits to the region. The tradition continues, however, to the effect that Swift kept a "journal" in which he recorded his activities and gave clues to his secrets. A number of documents, each purporting to be the original "Swift's Journal," are in existence. Needless to say none of these documents has ever yielded the information necessary to locate the reported mine or the caches of precious pig-metal which are supposed to exist.

Nevertheless, many of the inhabitants of eastern Kentucky are firmly convinced of the truth of the tradition and most of the mountain counties lay claim to the lost mine. In fact during the first part of the nineteenth century many residents of the Big Sandy Valley and elsewhere devoted years of ceaseless labor and many thousands of dollars in an endeavor to locate the treasure, and even today there are men who habitually roam the mountains and valleys searching for "signs of metal"; and the tradition is

firmly established. Collins' History of Kentucky has several references to "Swift's Silver Mine," while Haywood's History of Tennessee and Kerr's History of Kentucky give traditional accounts of the subject.

There is of course little scientific foundation for the belief in the Swift Silver Mine story. Metamorphic or igneous rocks which might contain silver are very rare in Kentucky and these outcrops have been carefully prospected for minerals without results. Moreover it is absurd to suppose that the Indians knew anything about the rather elaborate process of extracting silver from its ore and it is indeed doubtful if anyone of Swift's attainments and equipment in the wild western country at a time antedating Daniel Boone could have successfully smelted ores on any large scale without leaving some evidence of the place and process. There is, however, an historical basis for the tale of Swift's wanderings in the mountains. It seems to be fairly well established that John Swift with five companions whose names are given as Hazlett, Ireland, Blackburn, McClintock and Staley actually came to Kentucky in 1760 to engage in some operations having to do with precious metals. It appears that they had connections in Virginia with a Mr. Montgomery who owned vessels which sailed the "Spanish Main" and also trafficked in metals and in dies for the coinage of gold and silver. Trips were apparently made by Swift and his company from time to time into the wilderness of Kentucky from Alexandria, Virginia from 1760 until 1769 and each trip seemed to have to do with the transportation of bullion and currency, but evidently their enterprise, whatever it was, was carefully guarded and has always remained a mystery. It is probably a fact that Swift with a band of hardy and daring associates did make periodical visits to the eastern mountains of Kentucky but the objects of their visits are not so evident. It has been suggested by some modern historians that a less romantic explanation than the mysterious silver mine is the suggestion that they were counterfeiters who came to this isolated region to mint into spurious English currency the gold and silver which had been obtained by their pirate associates on the Spanish seas. Whatever the explanation, it is a waste of time to suggest any but the accepted tradition to the "metal-hunters" of many mountain counties. Even if they admit the possibility of an illegal enterprise, they insist that somewhere

in a mythical "great Shawnee Cave," which is always mentioned in the tradition, there is a gleaming store of untold treasure in gold and silver coins awaiting the fortunate discoverer. And so they continue their endless search over the hills and through the hollows, peering into every fissure of the cliff, investigating every cave, scanning every mark on the rocks—and often discovering the evidences of early occupation which are of value to the archaeologist although disappointing to the treasure hunter.

Naturally the inhabitants of the region suspect that there must be some ulterior motive behind the activities of strangers who laboriously move heaps of dirt and ashes and pay out good money for labor for the sake of finding a few bones or useless "Indian relics." Such a performance is entirely too foolish from an economic standpoint to warrant credence. The logical conclusion is that they are either "revenueurs" who are trying to establish themselves in the good graces of the community or that they are searching for "Swift's Silver Mine." A few simple tests and an interesting type of cross-questioning and examination soon proves that the first conjecture is incorrect; therefore the second must be right. Then ensues a continued series of visits from men from all parts of the region. The visitor, after watching the excavations with some show of interest, finally asks for a private conference and with a mysterious air and wise nodding of the head asserts that he has discovered the secret of the hidden "metal" and produces his treasures—usually bits of iron pyrites or fragments of stone containing flakes of mica—as evidence of his discovery. Needless to say it is very difficult to persuade such men that you are not interested in hidden treasure or to convince them of the fact that your sole desire is to investigate prehistoric sites.

Superstition

We had flattered ourselves that because of considerable experience and many experiences in field work we were familiar with most of the superstitions of primitive communities and were not likely to violate any of the traditions which govern life in these regions. In Lee County, however, we encountered a belief which was new to us. Our camp was some distance from the cliff under which we were working and we therefore carried our noon lunch

with us. To improve our cold lunch, however, we kept coffee and our coffee-pot at the cliff and made hot coffee for the workmen as well as for ourselves. We have already mentioned that the water in the region is a strong sulphur water and is pumped from wells by the same power which is used for the oil wells. This mineral water, mixed with a considerable amount of oil, and usually standing in rusty iron pipes has a peculiar color and taste and incidentally makes a most remarkably flavored coffee. On one occasion we prepared our fire as usual to make the coffee but were unfortunate enough to choose sassafras for firewood, not knowing that it was the worst of luck to burn it. The results were astonishing. Our workmen laid down their tools and prepared to quit. One assured us that his cow would no longer give milk; another, that his rheumatism would immediately become worse; a third, that his wife would meet with a misfortune which her condition made possible. We were assured, however, that if we could find a horseshoe and place it in the fire, it might prevent these calamities. But the nearest road was far away and the possibility of finding a horse-shoe was remote. It required much persuasion and considerable diplomacy to care for the situation. The men were finally reconciled—but none drank the coffee that day.

CONCLUSIONS

From the excavations made in the so-called "Ash Caves" of Lee County and the material discovered at these sites we seem to be justified in concluding that we are here dealing with one or more aboriginal groups, probably small in numbers and of an unknown period, not necessarily pre-Columbian, who utilized rock shelters as habitations for a length of time sufficiently great to account for the really enormous accumulations of wood ashes which must represent camp-fires of great size or over long periods. It is evident that all of these sites are closely related and have had a very similar if not an almost identical history of occupancy.

It seems, also, that two distinct cultures are represented—one which may be very old and which is responsible for the ash beds, the hominy holes, the flints and the burials; the other a later culture which is represented by the pottery and the fabrics. To justify such an assumption it is necessary to note certain facts regarding the evidence.

A discovery of the first importance is that of the so-called "hominid holes" on the tributaries of the Kentucky River. Evidence of this method of grinding corn have long been known to occur in the drainage area of the Green River* and to be frequently found over a considerable area in central and western Kentucky,** but none had ever been reported from the streams of eastern Kentucky. Yet in the Lee County region seven were discovered—four at Red-Eye Hollow, two at Wilson Hollow, and one at Cave Fork Hill. Moreover, we were assured that others might be found in Wolfe County and in the eastern portion of Lee County at sites which we have not yet visited. It is reasonable to suppose, therefore, that these are not isolated cases, but that many of the small tributaries of the Kentucky River in the eastern part of the state will be found to have rock shelters with hominid holes. Since the only other known sites in Kentucky at which hominid holes may be found are those in the cliffs of the Green River valley, the culture of which has been pretty definitely determined as Algonquian, the temptation is very great to connect the early inhabitants of the rock shelters of Lee County with the cliff dwellers of Hardin, Meade and Breckinridge Counties. Yet it should be noted that there is a difference between the types of hominid holes of these two regions. The hominid holes of the Green River area are generally conical in form, the top being much larger than the bottom, and clearly suggesting the use of a bell-shaped pestle. On the other hand, of the relatively few hominid holes so far seen in Lee County, all appear to be almost cylindrical and seem to require the use of a cylindrical pestle of about three or four inches in diameter. The shape of the hole may have been determined by the type of pestle used or may have been due to the relative hardness and texture of the stone. If due to the former, it is obvious that an easily acquired cylindrical pestle might be made of wood, and we have noted in a previous section of this report that an artifact which might have been such a pestle was found near the bottom of the ash bed and against the rear wall of the shelter in Red-Eye Hollow (Figure 5). This artifact was the stump of a pine knot, slightly burned at one end and with a well made handle at

*Funkhouser and Webb, *Ancient Life in Kentucky*. pp. 143-145. 1928.

**Webb and Funkhouser, *American Anthropologist*. pp. 701-703, 1929.

the other. The charred end suggested that it may have been used as a "lighter" to carry fire or to have served the purpose of a torch in the shelter, but it is difficult to believe that the owner would have gone to the trouble of carefully cutting out a hand hold on a knot which was to have been burned. It seems more reasonable to assume that this is the remains of a pestle which after use and wear was discarded and happening to fall near the fire was charred, being very rich in resin. It was found at a distance of not more than ten feet from two deep cylindrical hominy holes. Irrespective, however, of the differences in the form of holes or pestles, the appearance in the two areas of the state of the same primitive methods of grinding grain strongly suggests a relationship between the cultures represented.

A study of the flint artifacts leads to a similar conclusion. We have already called attention to the fact that on two of the Lee County sites were found fragments of the so-called "net spacer" of stone and on a third site a similar artifact made of bone and that in form and material these artifacts are quite like those obtained by C. B. Moore at Indian Knoll, Ohio County, Kentucky, from sites regarded as definitely Algonquian.* Moore reports that many of these Algonquian net spacers had been broken by quartering which suggested to him the idea of ceremonial breaking at the time of deposit as mortuary offerings. It should be noted that the similar stone artifacts found at the Lee County sites had also been broken by quartering in the manner reported by Moore. It is interesting to note in this connection that among the flint artifacts found, there were no triangular forms. It is to be noted, also, that no pipes were found in the ash beds. The flint material, therefore, and the absence of pipes as well as the hominy holes strongly suggest Algonquian influence.

So far as skeletal material is concerned, it bears out the same assumption. It all represents the usual pre-Algonquian type of small stature and with brachycephalic skulls which has been found commonly throughout Kentucky and has been found to be characteristic of the Christian County sites† and of certain sites in Tennessee.‡

*Moore, C. B., *loc. cit.*

†Webb and Funkhouser, *The Williams Site*. p. 23.

‡Hrdlicke, A., 41st Ann. Rept. Bureau Amer. Eth. p. 612.

When we come to a study of the pottery and textiles, however, we are confronted with entirely different cultural evidences, since neither of these types of artifacts from the Lee County sites can be considered at all Algonquian. And we are at once impressed by the fact that both the pottery and the fabrics were very superficial and were not found deep in the ash beds nor associated with the skeletons or the flints.

The pottery found on all of the sites is quite similar. It is all hard-burned, gravel-tempered and uniformly thin. A few shards show surface decoration but the great majority show "cross-hatching"—the result of malleating the surface with the potter's paddle. In other words, it suggests at once the surface of the Cherokee pottery which is characterized by the marks of the cord-wrapped or grass-wrapped spatula. The small amount of pottery from each site was all taken from the surface and is clearly a recent introduction.

The outstanding characteristic of the sites is of course the fabrics which have been for some reason or other remarkably preserved. In variety of materials, weaves, designs and manufacture, these fabrics undoubtedly represent a high degree of ability in weaving and they form as interesting a collection of such materials as have been found in the state. But like the pottery, the textiles were all found either on or near the surface, in beds of leaves or in caches dug from the top into the ash layers. We are forced to conclude, therefore, that they had a common origin with the pottery. Moreover, we are reminded that the Cherokee, that very highly developed but detached member of the Iroquoian linguistic stock, had a fondness for caves and rock shelters and was certainly in Kentucky even after the beginning of the seventeenth century. It is not impossible that the Cherokee may have been responsible for both the pottery and the textiles.

In support of the plausibility of these suggestions we may note that one of the great linguistic groups known to have been in Kentucky at a very early period was the Algonquin. Of the subdivisions of this group, the tribe which left the greatest impression upon the archaeology of the state was the Shawnee. We know that the Shawnee made use of rock shelters as dwellings, used hominy holes, are associated with the quartered net spacers, had little in the way of pottery, left little evidence of the custom

of smoking and were much given to the use of bone and shell in their artifacts. On the other hand, after the period of Iroquoian supremacy somewhere around the year 1600, the Algonquian influence is less noticeable, but the evidence of the Cherokee, at least as a transient visitor is apparent. The Cherokee certainly had pottery and textile and also used caves and rock shelters as habitations.

It seems reasonable, therefore, to suppose that the original inhabitants of the Lee County shelters were the Shawnees or some of their kinsmen and that they were responsible for the ash beds, the hominy holes, the flints and the burials, while the later and intrusive pottery and fabrics may be credited to Cherokees of a much more recent period.

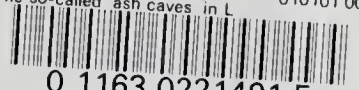
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